

THE DOCK & HARBOUR AUTHORITY

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Editorial.

The Shipping, Engineering and Machinery Exhibition.

The Shipping, Engineering and Machinery Exhibition which is held every two years opens at Olympia on September 10th and will continue until 26th September.

There will be on view many exhibits of interest to our readers, and we shall be pleased to meet any of those who contemplate visiting the exhibition, at our stand in the gallery.

The exhibits will include marine engines of all types, boilers of all capacities and ranges, paint sprayers, fans, oil purifiers, ships' telegraphs and navigational instruments, tools of all descriptions, electric welding machines, cooking apparatus, packings of all descriptions, batteries, diving apparatus, compressors and vacuum pumps, overhead runways, refrigerators, marine wireless telegraph and telephone equipment, and a multitude of other exhibits of interest.

In these times of trade depression, it is to be sincerely hoped that this Shipping, Engineering and Machinery Exhibition will give a much-needed fillip to the long overdue trade boom.

Madras Port Trust.

The administration report for 1930-31 of the Madras Port Trust shows considerable decreases compared with the previous year and these are attributed to the severe world-wide depression in trade and has resulted in a serious fall in the trade of the port, both in imports and exports, and also a corresponding reduction in revenue receipts.

The value of the trade of the port for the year under review amounted to 3,699.92 lakhs, and shows a decrease of 1,361.99 lakhs as compared with the previous year. Imports accounted for 2,161.15 lakhs as against 2,799.55 lakhs in the previous year, and exports 1,538.77 lakhs as against 2,262.35 lakhs in the previous year.

The actual revenue receipts for the year amounted to Rs. 38,07,647, being a decrease of Rs. 7,23,374 as compared with the previous year.

The gross expenditure including contributions to reserve fund amounted to Rs. 38,38,530 as compared with Rs. 45,33,938 in the previous year.

The total tonnage of imports and exports which passed through the harbour during the year under review amounted to 1,262,407 tons, showing a fall of 16.75 per cent. compared with the previous year. Imports accounted for 920,646 tons, a decrease of 15.5 per cent. over 1929-30, the biggest decrease being in coal which was 79,932 tons less. Exports accounted for 341,761 tons as against 426,928 tons for the previous year, this being a decrease of 19.95 per cent., the biggest decrease was in ground nuts, there being a fall of 56,371 tons.

The Port of Chios.

The Port of Chios, which is situated in the Aegean Sea, and is the port of the island of that name, forms the subject for this month's supplement.

An illustrated article relating the history of this port and its future prosperity appears on another page.

Closing of Liverpool Docks.

As a measure of economy, the Mersey Docks and Harbour Board has decided to close temporarily the dock sheds on the east side of the Toxteth and the Harrington Docks, at the south end of the Dock Board system. For some time only modest use has been made of them. Sheds other than those on the east sides of the two docks mentioned, including appropriated berths—will be unaffected by the closing order, but in view of the use to which the water space is to be put—a mooring place for idle ships—the activities of the sheds generally will be seriously restricted. A Dock Board official emphasises the point that the decision to close the sheds is

only a temporary measure. As soon as trade justifies it will be reopened.

Financial Statement of Dundee Harbour Trustees.

Submitting the annual financial statement and estimates at a recently-held meeting of Dundee Harbour Trustees, Mr. Ralph C. Cowper (Convener of the Finance and Rights Committee) intimated that the actual revenue of the harbour during the past year was £115,520. This was a very considerable sum and one which many ports would be very glad to report, and he thought it was gratifying that, although the actual result was £19,000 below the estimate, the ordinary expenditure on the other hand was only £115,595. The number of bales of jute imported was 528,978 as compared with 825,447 in 1930, 1,061,070 in 1929, and 1,094,196 in 1928. Referring to the revenue from exports, Mr. Cowper said that he was sorry to intimate a reduction in grain. At one time this was a flourishing export, but the figures for 1930-31 were the lowest on record. They had exported only 3,086 tons, and there was no doubt that this important export was being prejudicially affected by the unrestricted import of Russian grain to all parts of the United Kingdom.

Reconstruction of Harbour Works at the Port of St. John, New Brunswick, to be Expedited.

According to the Chairman of the Saint John Harbour Commission, authority has been received from the Dominion Government for the rebuilding of the West Side properties destroyed by fire on June 22nd. A preliminary survey of the situation is now being made by Mr. Hugh Beaver, an ocean terminal expert connected with the firm of Sir Alexander Gibb and Partners, the well-known British harbour engineers. Sir Alexander Gibb, it may be mentioned, has been engaged by the Dominion Government to make a detailed report on Canada's principal seaports, but while awaiting the experts' recommendations, contracts are to be let immediately for the clearing up of the debris at the docks and the reconstruction of the sub-structure of the damaged wharves, final plans being made later.

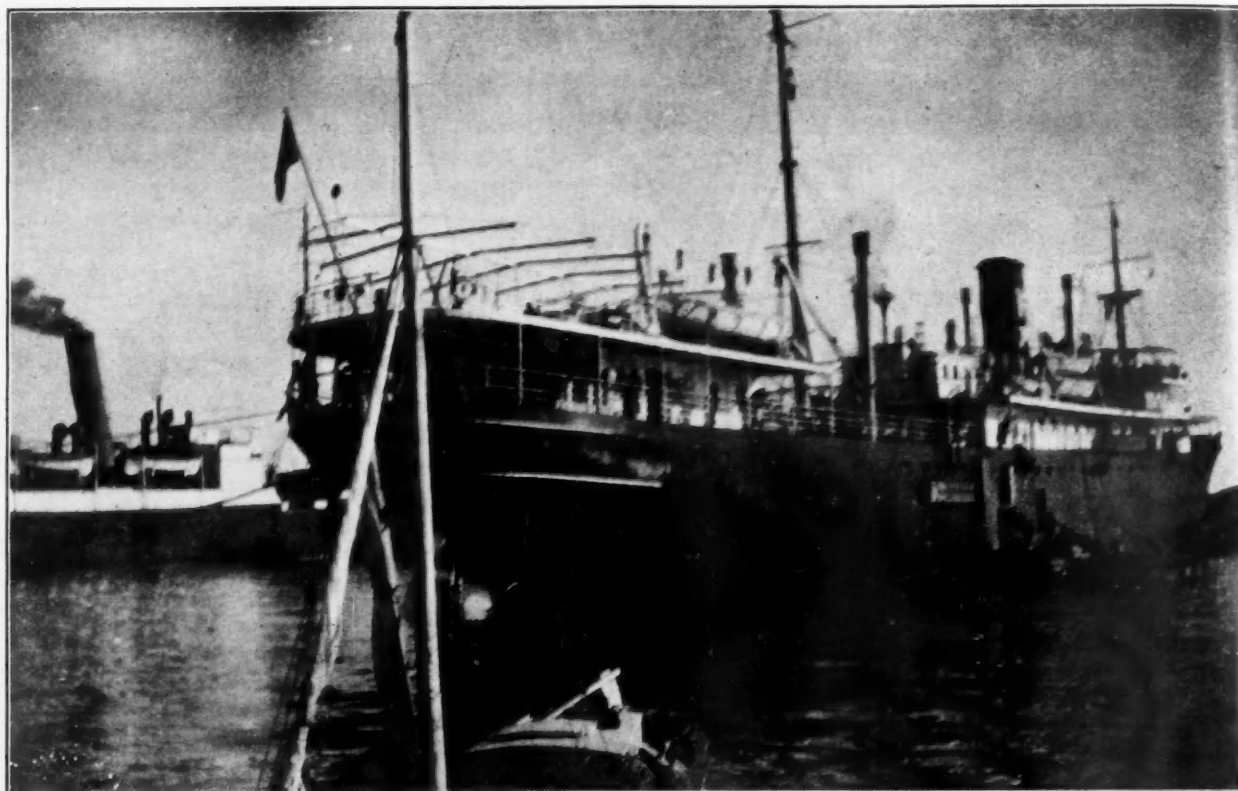
Fireproof-type construction will be begun at berths Nos. 15 and 16, where undamaged concrete piers are still standing; and, should the survey reveal the timber cribwork to be physically unimpaired, splendid working equipment would probably be ready for the coming winter.

Every effort will be made to have eight new fireproof berths in readiness for the opening of the winter season on December 1st. The Harbour Board has arranged to place flood lights throughout the area and work will be carried on continuously, using three 8-hour shifts per day.

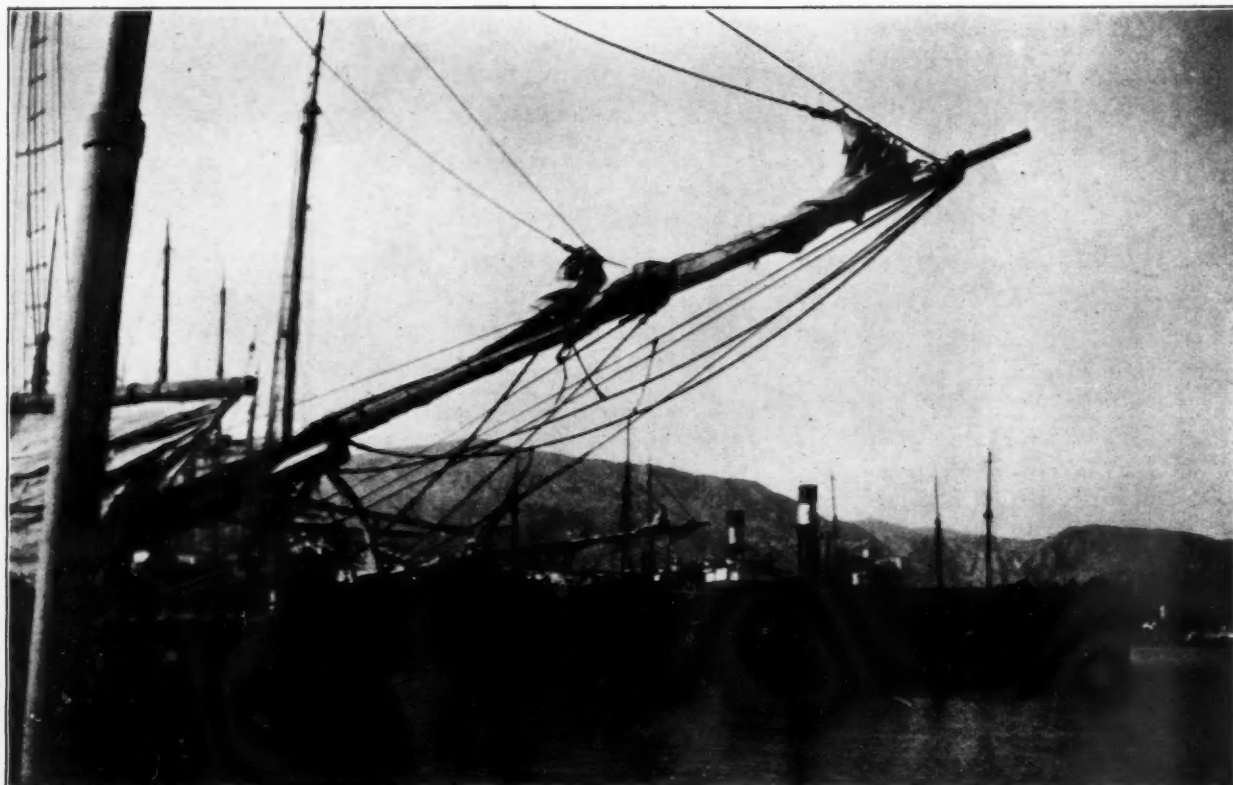
Saint John is an all-season port, conveniently situated on the Bay of Fundy, and while enjoying considerable maritime trade in the summer season, which the remaining harbour facilities are capable of handling, its winter commerce is of paramount importance. Heavy shipments of grain and other commodities flow through the port after the freeze-up on the St. Lawrence River, and it also becomes a winter terminal for numerous steamship lines to Great Britain and the Continent, to South Africa, India and the West Indies, etc.

Both of Canada's great railway transportation systems have terminal interests in Saint John. Those of the Canadian Pacific suffered heavily in the recent fire and are expected to be replaced but those of the Canadian National, which are situated on the opposite side of the harbour, were not affected. The conflagration practically wiped out the Sand Point terminals in West Saint John including 11 sheds and grain conveyors, grain elevator, freight and baggage offices and other buildings. The urgent job in rebuilding, is to replace the old sheds with fireproof structures as rapidly as possible.

Port of Chios



Liners unloading in the Port of Chios.



Vessels unloading Coal in the Port of Chios.

It
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The Port of Chios

By ANTONIO GIORDANO



Breakwater in the Port of Chios.

A GREEK island which is worthy of notice is the island of Chios, situated practically below the island of Mytilene in the Aegean Sea, especially as Chios is a rather important port in connection with the exports of oranges and lemons. The town and port of Chios were founded at the time of Byzantium, and has since shown a noteworthy commercial importance in connection with the trade between Northern Turkey and Egypt, as all ships leaving Smyrna for Egypt call at Chios. This port has also been under Genoese control, of which there are still important signs left, and it was then a Turkish possession until 1912, when the Greek Navy occupied it. The industries which exist at present at Chios have shown considerable advances since the Turkish occupation.

While the island of Mytilene is situated on the route between Smyrna and the Dardanelles and between Smyrna and Salonica, Chios is situated on the route between Smyrna and the South-Eastern Mediterranean. The exact geographical position of Chios is 38 deg. latitude and 26 deg. longitude East from Greenwich. The main town is Chios, with about 20,000 inhabitants, besides 16,000 refugees from Asia Minor, who settled at Chios in 1922. The town of Chios, which is also connected to Greece by means of an Eastern Telegraph Cable, is in touch with the interior of the island through efficient roads as that from Chios to Volisso up to Mesta, where there is a very large natural harbour and where there is a depth of water of 15 metres. About 15 per cent. of the usual population is employed in the local industries, including cotton textiles factories, a wool yarn factory, tanneries, etc.

There was created in 1894 the Société Anonyme du Port et des Quays de Chios, which obtained from the former Turkish Imperial Government the concession relating to the construction and operation of the port of Chios. The construction of the present port was started in 1895 and terminated in 1899.

The concession has been granted for a period of 50 years, and after the Greek occupation this concession was recognised by the Greek Government. However, it should be taken into consideration that while, according to the contract made with the former Imperial Turkish Government, the S.A. Port et Quays de Chios was authorised to collect the taxes on a gold basis in consequence of the depreciation of the drachma, the principles on which the convention was made have been greatly altered.

The actual port of Chios is sheltered by two breakwaters measuring about 600 metres each in length and having an



Lumber Dock at the Port of Chios.

Port of Chios—continued



A Panoramic View of the Port of Chios.

entrance of 94 metres in width, marked by one green and one red light. The quayside of the port of Chios reaches about 1,500 metres, and includes the following sections : A, 332 metres; B, 242 metres; C, 530 metres; and D, 360 metres. The depth of water in the inner port differs from 2 to 7 metres, and it very often happens that larger ships anchor in the Canal between the port of Chios and the Asia Minor coast. It should be noted that vessels are very frequently laid up at Chios, as several Greek shipowners have their headquarters at this port, and ships in ballast enter the inner port by their own means to be laid up. The warehousing facilities correspond to the requirements of trade, and include two warehouses of about 5,000 tons each, besides the ordinary warehouse of the Greek Custom's Authorities. The quays are served by two land cranes of 3 tons each. The unloading and loading is undertaken by the steamship agents themselves. In order to increase the capacity of the port, the majority of the vessels are anchored stern to quay, and consequently operations are undertaken by means of lighters, of which there are about 30 in the port. Steamers unloading lumber necessary for the construction of cases used for the export of oranges, liquors, etc., are instead anchored alongside. The cost of unloading reaches from 60 drachmas upwards for goods in bags, and from 72 drachmas upwards per ton for goods in cases and heavy parcels from "sous palan" on to the quay, where receivers take delivery of the goods. The bunkering of coal is possible at any time day or night, as there are always about 3,000 tons in stock, the Greek Navy maintaining a large bunkering station at Chios. Bunkers are loaded by means of baskets with the ship alongside. About 300 tons can be bunkered daily. Fresh water supplies can be obtained at Chios from the town authorities, which operate an efficient waterworks.

It will be seen that Chios, besides offering efficient harbour facilities, offers everything required by a transit port.

Following the statistics which have been supplied by the Société Anonyme du Port et Quais de Chios, tonnage calling at that port during the past few years has shown an increasing tendency, as is shown by the following schedule:—

ARRIVALS					CLEARANCES				
	No.	N.R.T.	Goods from Abroad Tons	Home Tons		No.	N.R.T.	Goods to Abroad Tons	Home Tons
1930	996	665,068	11,854	45,545		1,018	698,115	3,296	13,066
1929	1,178	569,178	10,828	32,457		1,175	567,536	2,279	9,225
1928	952	500,077	9,464	19,906		946	497,229	2,473	6,578
1927	670	349,323	6,260	10,034		670	361,807	3,384	5,320
1926	345	182,885	5,477	6,741		332	169,686	2,056	5,763
1925	650	393,691	7,648	16,309		688	404,113	3,063	6,254
1921	610	287,130	14,206	8,644		555	265,979	10,176	3,176

Shipping at Chios has shown an increase during 1930 in spite of the fact that total shipping at Greek ports has shown a decrease, and the progress of trade in the port has been uninterrupted from 1926, particularly in regard to the import trade both from abroad and from home ports, and the export trade to national ports.

In order to judge this progress better it may be interesting to examine the figures relating to the main goods unloaded and loaded at Chios during the past few years:—

IMPORTS		1929	1928	1927	1926	1925
		Tons	Tons	Tons	Tons	Tons
Flour ...	...	6,900	6,500	6,300	6,970	5,612
Coal ...	...	2,500	1,450	1,680	1,005	1,934
Sugar ...	...	1,050	1,260	930	760	1,150
Raw skins ...	...	1,800	1,100	1,650	880	1,080
Dross ...	...	3,600	2,900	3,300	2,740	2,290
Lumber (cubic metres)...	...	9,700	6,400	5,700	6,750	7,900
EXPORTS		Tons	Tons	Tons	Tons	Tons
Oranges and Lemons ...	...	6,000	5,500	4,000	5,250	5,500
Tanned skins ...	...	1,020	1,050	1,400	1,400	1,600
Tobacco ...	...	1,510	1,030	520	580	940

Traffic at Chios does not consist of a few articles, as is the case at Pireaus, Salonica, and even Istanbul. The greatest part of the traffic at this port consists of general cargo, and this is also one of the reasons why considerable tonnage is attracted to the port of Chios, the calling there being rather remunerative, also because exports are about one-quarter of the imports, whereas at several ports, such as Pireaus, exports are only a very small percentage of imports.

Chios is connected to other Aegean and Mediterranean ports, as follows:—

- (a) To Pireaus, Patrass and Brindisi, through a regular service of the Hellenic Coast Lines.
- (b) To the above ports through an express service operated by the Inglessi Co., of Samos.
- (c) To Mytilene, Lemnos, Dedeagatch, Cavalla, Salonica, Volos and Pireaus by a mail service of the Hellenic Coast Lines.
- (d) To Rhodes and Alexandria by a fortnightly service of the Società di Navigazione Puglia of Bari.
- (e) To Smyrna, Syria and Pireaus by the above mentioned Società di Navigazione Puglia.

Port of Chios—continued



Vessels unloading Coal in the Port of Chios.

(f) To Yugoslav ports in the Adriatic by a regular service of the Jadranska Plovidba of Sussak.

(g) To Adalia, Mersina, etc., by regular services of Istanbul and Bulgarian shipowners.

In addition to these regular services, ships of the American Export Lines, the Cunard Anchor Line, the Nederlandsche Stoomboot Mijs, the Deutsche Levant Linie und Orient Dienst, etc., are calling at Chios whenever freight is offering.

In order to be able to judge the share of the various foreign flags in shipping at Chios it may be interesting to compare the

1929 figures (the latest available) with those for 1921, as in the schedule below.

From the schedule it clearly appears that while there has been a decrease in the volume of trade handled by British vessels there has been an increase in the volume of trade handled by Norwegian, Swedish and Italian ships. As a matter of fact, while about ten years ago Chios had direct connection with most of the overseas countries, now much of the trade is handled through Pireaus, Trieste or Genoa, in consequence of the fact that many Italian, Greek, etc., ships are calling at Chios on their way to the East or to the West.

	No.	N.R.T.	1929 ARRIVALS Goods		CLEARANCES Goods		No.	N.R.T.	1921 ARRIVALS Goods		CLEARANCES Goods	
			Abroad Tons	Home	Abroad Tons	Home			Abroad Tons	Home	Abroad Tons	Home
Greek	1,025	389,017	3,026	31,298	855	9,162	451	187,125	7,201	8,373	5,502	3,004
American	—	—	—	—	—	—	1	2,174	500	—	—	—
British	8	10,466	948	—	188	21	113	72,388	4,698	128	2,311	98
Bulgarian	33	37,284	1,054	82	946	4	1	752	—	—	—	—
Dutch	—	—	—	—	—	—	2	5,620	—	—	27	—
Egyptian	9	15,957	41	—	180	—	1	1,433	19	—	—	—
French	—	—	—	—	—	—	6	1,186	166	143	135	—
German	1	1,453	—	54	—	—	2	1,021	—	—	—	—
Italian	46	78,252	2,863	54	227	3	21	10,529	1,394	—	1,359	—
Jugoslav	5	5,107	528	—	—	—	—	—	—	—	—	—
Norwegian	2	2,212	160	200	—	—	—	—	—	—	—	—
Polish	1	340	300	—	—	—	—	—	—	—	—	—
Roumanian	—	—	—	—	—	—	1	37	—	—	—	—
Russian	—	—	—	—	—	—	11	4,865	213	842	—	—
Swedish	2	2,970	100	813	—	—	—	—	—	—	—	—
Turkish	45	24,729	1,628	—	45	—	—	—	—	—	—	—

Bremen's Seagoing Shipping Traffic in June, 1931

In June Bremen's seagoing shipping traffic reached a remarkable height. With 854,071 net registered tons, it was only about 22,000 net registered tons less than the record month—August, 1928. Compared with May, 1931, and June, 1930, the increase amounted to approximately 65,000 net registered tons each, or 8 per cent. The chief cause of this increase is the considerable growth of Bremerhaven's figures, due to the seasonal development of traffic with North America. In the first half-year, 1931, a total of 4,327,948 net registered tons entered. That is 162,672 net registered tons, or 4 per cent. less than in the first half of the previous year. The decrease in traffic compared with 1930, which came to 6 per cent. up to the end of May, has thus been not inconsiderably reduced.

Sea-borne goods traffic of the five most important Weser ports in June imported and exported amounted to 446,400 tons. This is an increase over the previous month by 5,400 tons, but a decrease compared with June of the previous year of 42,100

tons, equal to 9 per cent. Imports rose by 17,500 tons to 286,400 tons, equal to 6 per cent., compared with the previous month. On the other hand, exports decreased by 12,100 tons to 160,000 tons, equal to 7 per cent. Compared with June, 1930, imports decreased by 37,100 tons, equal to 12 per cent., and exports by 5,000 tons, equal to 3 per cent. During the first half of 1931, 2,530,300 tons were exported, against 3,220,900 tons in the same period in 1930. Traffic has therefore decreased by 690,600 tons, or 21 per cent. Imports amounted to 1,577,200 tons, a decrease of 508,200 tons, equal to 24 per cent., of which approximately 100,000 tons fell to grain, 77,200 tons to iron ore, and 75,600 tons to timber. Almost half of the total decrease, therefore, fell to these goods. Exports decreased from 1,135,500 tons in the first six months of the previous year to 953,100 tons, that is a decrease by 182,400 tons, or 16 per cent., chiefly due to the decrease in the export of potash by 103,900 tons.

The Port of New York

Latest Data issued by the Bureau of Commerce

Industrial Transportation in New York Harbour Coal.

THE channels of the Port of New York are often termed a water belt line for the transportation of commodities to industry. The harbour waters play a most important part in the handling of coal. Arriving at tidewater by rail from Pennsylvania and West Virginia fields, the coal is stopped on the westerly side of the Port, and from that point needs to be transported over water for delivery in the populous and industrial sections of Manhattan, Long Island, and Bronx. Thus the waterways of the Port are used as a convenient and economical medium for the transportation of coal from the "coal ports" to points of final consumption.

All of the coal used in the Port, however, is not received by rail. Electric power plants, gas works, and coke producers, consumers of coal in large quantities, have found it practical to receive coal from Hampton Roads, Va., direct by steamer. During the year 1929, the amount so received was 2,800,000 short tons.

Since water transportation is a very definite factor in the handling of coal, we find power plants, gas works, retail coal yards and other large users of the commodity, situated on the waterfronts, where their supplies may be received by vessel.

There are a number of railroad termini on the west side of the Port, known as "coal ports," where coal is dumped into vessels, as listed below:—

Locality	Waterway	Railroad
Edgewater, N. J. ...	Hudson River	N. Y. S. & W.
West New York, N. J. ...	Hudson River	N. Y. O. & W.
Jersey City, N. J. ...	Hudson River	D. L. & W.
Jersey City, N. J. ...	Hudson River	Pennsylvania
Jersey City, N. J. ...	Hudson River	C. R. R. of N. J.
Jersey City, N. J. ...	Upper Bay ...	C. R. R. of N. J.
Greenville, N. J. ...	Upper Bay ...	Pennsylvania
St. George, N. Y. (Staten Island)	Upper Bay ...	B. & O.
Arlington, N. Y. ...	Arthur Kill ...	B. & O.
Elizabethport, N. J. ...	Arthur Kill ...	C. R. R. of N. J.
Port Reading, N. J. ...	Arthur Kill ...	Phila. & Reading
Perth Amboy, N. J. ...	Arthur Kill ...	Lehigh Valley
South Amboy, N. J. ...	Raritan Bay ...	Pennsylvania

At some of these terminals, the cars are run on trestles over the piers, the coal being transferred to the vessel by means of chutes. Other terminals, however, are equipped with car dumpers, which turn the cars over, dumping the whole contents at one time, and operating at the rate of about 30 cars per hour.

The vessels used in the transportation of coal in the harbour are wooden barges carrying from 300 to 1,500 tons capacity. The unloading is performed by the use of clamshell buckets, and may be witnessed at most any time, particularly at the electric power plants along the East River, where the operations are going on almost continually.

The magnitude of the coal handling industry in the Port is best illustrated by the fact that during the calendar year 1929, over 20,000,000 short tons of coal were transferred to vessels at the "coal ports," according to the figures compiled by the United States Engineer Department. About 85 per cent. of the above amount is for local consumption, on the east side of the Port, the remainder being shipped out of the Port.

All of the coal arriving at the Port of New York by rail, however, is not transferred to barges, some of it continuing the rail movement across the harbour on carfloats, while that destined for delivery on the west side of the Port moves direct.

The distribution of coal by water during 1929 was as follows:

Route	Amount (short tons)	Per Cent.
Export ...	70,072	0.3
Coastwise ...	2,961,172	14.8
Internal ...	30,043	0.2
Intraport ...	17,007,908	84.7
	20,069,195	100.0

The coal exported moved mainly to Canada via the Hudson River and Lake Champlain, while the coastwise shipments were entirely to points in New England. Internal shipments were to interior points reached by inland waterways, as on the upper stretches of the Hudson River. The intraport shipments remained wholly within the Port.

Value of Foreign Trade at the Port of New York.

During the month of May, 1931, the value of foreign trade at the Port of New York amounted to \$158,220,000, which is

\$107,432,000 or 40 per cent. less than during the same month last year, when the value of foreign trade amounted to \$265,652,000. The value of foreign trade at the Port of New York during May constituted 41 per cent. of that of the whole United States.

Imports were \$83,714,000 compared with \$135,023,000 in May, 1930, and exports were \$74,506,000 in comparison with \$130,629,000 a year ago.

	1931	May 1930	Net Change	Per Cent.
	\$	\$	Amount	
Exports ...	74,506,000	130,629,000	-56,123,000	-43.0
Imports ...	83,714,000	135,023,000	-51,309,000	-38.0
Exports and Imports ...	158,220,000	265,652,000	-107,432,000	-40.5

One of the reasons why the Port of New York handles such a large percentage of the total exports in the United States is shown by a compilation published recently by the United States Department of Commerce. This compilation shows a subdivision of the exports of the United States according to the state of origin in which they originate. In the calendar year ending December, 1930, the total exports of the United States amounted to \$3,781,172,000. \$885,590,000, or 23 per cent., originated in the States of New York and New Jersey. These two states alone produce nearly one-fourth of the total exports of the United States. The States north of the Ohio River and east of the Mississippi, including the New England States, produce exports worth \$2,051,107,950, or 54 per cent. of the total for the entire country. These States find the Port of New York a natural outlet for their products. It is easy to understand why New York handles 36 per cent. of the nation's exports.

Grain Exports.

The volume of domestic and Canadian grain exported from the Port of New York during May, 1931, was 67 per cent. greater than that of the same month last year.

	1931	May 1930	Net Change	Per Cent.
	(bushels)	(bushels)	Amount	
Through the Port of New York—				
Domestic and Canadian Grain	7,621,000	4,562,000	+3,059,000	+67.0
Domestic Grain ...	1,076,000	274,000	+802,000	+292.0
Canadian Grain ...	6,546,000	4,288,000	+2,257,000	+52.6

Ranking United States Ports in Foreign Trade.

A recently published report of the United States Shipping Board showing the volume of foreign commerce at United States ports during the fiscal year ending June 30th, 1930, tabulates the ports in the order of their rank. New York occupies the first place with 24,950,675 tons, which is more than the total of the three next ranking ports, and 36 per cent. of the total of the first ten.

Compared with volume of foreign trade in the fiscal year ending June 30th, 1929, Baltimore has advanced from 4th to 2nd place, Los Angeles from 5th to 3rd, New Orleans has dropped from 2nd to 4th, and Philadelphia has advanced from 6th to 5th. San Francisco has maintained its rank as 7th in both years, while Buffalo has dropped from 3rd to 10th.

The following tabulation shows the relative volume of foreign trade of the first fifteen ranking ports:—

Foreign Commerce of the Fifteen Leading Ports of the United States
Fiscal Year Ending June 30th, 1930
(In tons of 2,240 pounds)

Rank			Total		Imports		Exports
Fiscal		Port	Foreign	Rank	Volume	Rank	Volume
Year			Commerce				
1929	1930						
1	1	New York, N. Y.	24,950,675	1	16,207,472	1	8,743,203
4	2	Baltimore, Md. ...	7,237,712	2	6,116,913	13	1,090,799
5	3	Los Angeles, Cal.	7,095,607	13	674,132	2	6,421,475
2	4	New Orleans, La.	6,386,286	4	3,395,741	4	3,592,545
6	5	Philadelphia, Pa.	6,291,757	3	4,458,384	7	1,836,373
8	6	Houston, Tex. ...	4,165,268	21	377,728	3	4,087,540
7	7	San Francisco, Cal.	3,407,844	7	1,189,052	5	2,218,792
9	8	Boston, Mass. ...	2,796,617	5	2,553,484	37	243,133
12	9	Toledo, Ohio ...	2,792,662	9	946,648	6	1,846,014
3	10	Buffalo, N. Y. ...	2,606,230	6	1,992,662	22	613,568
10	11	Norfolk, Va. ...	2,295,415	14	599,328	8	1,696,087
11	12	Galveston, Tex. ...	1,885,181	23	203,109	9	1,592,072
13	13	Portland, Ore. ...	1,413,552	43	108,619	10	1,304,933
25	14	Detroit, Mich. ...	1,380,686	8	1,146,145	45	194,541
23	15	Tampa, Fla. ...	1,362,603	32	163,812	11	1,198,791

The Port of New York—continued

It is noted that New York and New Orleans maintain their relative rank in both imports and exports, while others vary considerably. Boston, for instance, while ranking 8th in total foreign commerce, holds 5th place in imports and 37th in exports. In some instances the wide difference between imports and exports is due to the dominance of a single commodity or group of commodities in foreign trade. Galveston and Houston owe their rank in foreign trade to a large export volume of petroleum, while Norfolk and Portland, Ore., have large exports of coal and lumber respectively.

Commerce at Port Newark.

Receipts of lumber by vessel at Port Newark, which is part of the Port of New York District, during the month of June, 1931, amounted to 21,045,000 board feet as compared with 30,927,000 board feet during the same period last year, a decline of 32 per cent. For the first six months of 1931 the lumber receipts are 99,181,000 board feet as against 151,882,000 board feet in the first six months of 1930, a decline of 35 per cent.

Distribution of lumber from Port Newark totalled 27,557,000 board feet, of which 9,289,000 board feet moved by rail, and 18,268,000 board feet moved by truck.

Receipts by vessel of cargo other than lumber amounted to 16,871 tons as compared with 5,460 tons in June, 1930, an increase of 209 per cent.

Twenty-three steamers arrived at Port Newark during the month as compared with 17 a year ago.

Steamship Passenger Traffic.

A tabulation of passenger bookings for the first six months of the year by Transatlantic lines operating between U.S. and European ports shows the following declines from the same period in 1930:—First class, 23,000; cabin, 18,500; second class, 22,500; tourist third, 17,700; third class, 49,000, or a total of 130,700 for all classes.

Up to the end of May, the Bureau of Immigration reports a total of 272,670 passengers arriving or leaving the Port of New York for foreign shores. This is 74,865 less than for the 1930 period, which totalled 347,535. As previously indicated, the biggest drop took place in the number of Alien Immigrants admitted to this country:—

		May 1931	May 1930
INBOUND—			
Aliens—Immigrant	...	2,639	13,361
Non-Immigrant	...	9,374	12,117
U.S. Citizens	...	15,338	18,472
Total	...	27,351	43,950
OUTBOUND—			
Aliens—Emigrant	...	2,931	2,490
Non-Emigrant	...	10,236	11,768
U.S. Citizens	...	15,719	21,448
Total	...	28,886	35,706
Total—Inbound and Outbound	...	56,237	79,656
Total for 5 months	...	272,670	347,535

The Treasury Department also reports a decrease in the number of passports issued through the New York office. For the fiscal year ending June 30th, 1931, a total of 52,196 passports, including renewals, were issued. This compares with 62,437 issued during the previous fiscal year, a drop of 10,241.

The highest number ever issued at the local office was 65,131 during the fiscal period ending June 30th, 1929.

Vessel Movements in Foreign Trade.

Number of vesels in foreign trade, entering and clearing New York Harbour, continues to be less than in 1930, although vessel tonnage total about the same as last year.

		June, 1931		June, 1930	
		No. of Vessels	Vessel Tonnage	No. of Vessels	Vessel Tonnage
Entrances	...	541	2,747,134	585	2,722,344
Clearances	...	526	2,596,749	560	2,598,236

What does the Shipping Industry spend in the Port of New York?

The Port of New York performs a valuable service for ocean-going steamships, furnishing a concentration point from which the ships receive and deliver millions of tons of freight and millions of passengers a year. At the same time the shipping industry contributes a large sum to operators of port facilities each year.

A calculation of the amount spent by ocean-going vessels operating from the Port of New York results in an estimated total of \$225,000,000 per annum paid for berthing, towing, piloting, fueling, provisioning, and repairing of ocean-going ships. This includes merely the sum of rentals paid for piers and the service and supply charges without any allowance for the money spent by crews, or the sums contributed by

passengers and freight brought in and taken out by the steamships.

Steamship Sailings.

Due to the big decrease in passenger traffic, four of the leading Transatlantic carriers have agreed to cancel a number of sailings of their express liners during the balance of this year. No doubt this action will be followed by some of the other lines, and sailings reduced to a minimum basis until such time as more people make up their mind to travel by water again.

This revision of schedules is reflected in the monthly sailings for June which had a total of 1,527 as against 1,570 for the same month last year. Regular service in foreign trade dropped from 558 to 516 sailings and the biggest decrease for any one trade route applied to the Italy-Mediterranean service which reported 18 sailings for the month compared to 26 in June, 1930. Tanker sailings to foreign ports also fell away.

However, despite the curtailed schedules, the Port of New York still maintains the lead with at least a sailing per week to any foreign port of importance. On Saturday, June 13th, which was the peak day of the month, 89 vessels sailed from this port. Of this total, 42 were in foreign service, and included 8 to the United Kingdom, 2 to the Baltic, 2 to Hamburg and Bremen, 2 to Rotterdam and Antwerp, 11 to Caribbean-Mexican ports, 3 to Rio and the River Plate, 2 to the West Coast of South America, 1 to Australia, and 4 tankers. The 47 domestic sailings included 3 to the Pacific Coast, 15 to South Atlantic and Gulf Ports, 16 to New England and Long Island Sound points, 2 tankers and 3 coal carriers.

New York State Barge Canal.

Up to the end of July 11th, the total volume handled on the State Canal, since the opening of naviagtion, amounted to 1,383,463 tons, a gain of 39,137 tons over the same period in 1930.

The season's total for wheat is 457,855 tons, which places it well ahead of last year when 386,699 tons were moved for a like period. Petroleum and other oils amounted to 318,116 tons, which compared with 283,811 tons for 1930. So far this season 90,268 tons of sugar moved via the Canal as against 46,138 tons for the same period last year. Other commodities were iron and steel articles which totalled 64,174 tons as against 45,582 tons last year; chemicals, 28,462 tons this year compared with 3,520 tons last year, and 69,277 tons of barley which compares with only 2,456 moved in the 1930 period.

The barge canal continues to serve not only the Port of New York but the whole North Atlantic seaboard and Great Lakes region. Canned goods and sugar have been moving regularly from Philadelphia to Lake ports, and New England receives grain and pig iron via that waterway, shipping by return cargo such manufactured products as machinery, etc. Now the barge canal is employed for the transportation of refined sugar from refineries in Boston to Rochester, Buffalo, Chicago, and Detroit, and it is expected that a regular service in this commodity will be maintained.

Coal Shipping Plant for Grimsby Docks.

The London and North Eastern Railway Company placed an order with Messrs. Henry Simon, Ltd., Conveying Engineers, Cheadle Heath, near Manchester, for a coal shipping plant, which is to be installed at the Royal Docks, Grimsby. The plant will have a total handling capacity of 1,600 tons of coal per hour, and is to be erected on a new jetty to be constructed by the railway company.

The installation will consist of four sets of double hydraulic wagon tipplers to handle 20-ton coal wagons, with steel hoppers below, four apron feeders to control the rate of delivery of coal from the hoppers, four bulk conveyors from the hoppers to a junction house which is to be built on the new jetty, and four further conveyors to loading out structural steel towers, which are to be erected at two points on the jetty.

The first group of conveyors will range from about 450-ft. to 550-ft. in length, and a second group will consist of two conveyors, each 250-ft. long, and two about 580-ft. long. The conveyors will have a handling capacity of 400 tons of coal per hour each.

The loading-out towers will be about 75-ft. high, and on the top of each will be mounted a revolving crane to carry the anti-coal breaker shoots.

Each tower will be provided with two loading-out conveyors arranged for luffing, slewing and telescoping, and having a maximum length of about 46-ft. There will also be two loading berths on the outer conveyors of the first group for delivering coal to trawlers and small craft.

Messrs. Simons' contract includes all the coal-handling machinery in the towers, as well as gantries to carry the lines of conveyors.

Jugoslavian and Near Eastern Port Matters.

SHIPPING at Roumanian ports during 1930 has reached 3,304,267 tons as against 2,521,184 tons in 1929, thus showing an increase of 783,083 tons, and in this connection it may be interesting to consider the figures for the following ports:—

	1929	1930
Galatz	696,252	782,562
Braila	514,210	744,277
Kilia	95,141	221,563

Imports have shown a decrease at Braila (55,457 tons in 1930 against 84,675 tons in 1929) and at Galatz (81,087 tons in 1930 against 88,910 tons in 1929). It should be noted that at Constanza imports are practically negligible compared to exports. Exports reached 2,548,402 tons during 1930, showing an increase of 942,106 tons in respect to 1929, and including the following items: Oil, 1,905,505 tons; cereals, 582,499 tons; and lumber, 396,658 tons. Imports, however, only reached 165,317 tons (a decrease of about 9,000 tons in respect to 1929) and included iron ore, textiles, automobiles, etc. During 1930 shipping at Constanza included 1,565 ships, representing 3,841,555 net register tons, among which there were 333 Italian ships, 293 British ships, 255 Roumanian ships, 99 Greek ships, 93 German ships, 70 French ships and 49 American ships.

According to statistics which have been published by the Greek Ministry of the Navy, the following is a schedule of shipping at Greek ports during the month of June, 1931:—

requested to revise the project for Salonica, and has entered into negotiations for building other Greek harbours.

According to statistics which have been published by the Shipping Section of the Russian Soviets Delegation at Athens, from July 1st, 1930, to June 18th, 1931, 433 ships flying the Greek flag and representing 2,302,335 tons have been chartered for carrying goods from Russian ports, and for such service an amount of £1,258,765 have been paid. It would appear that further inquiries have been made from Russia on the Greek market.

The Istambul Liman Sirketi has issued further information in connection with shipping at that port during the month of June, 1931. It appears that 641 ships, including 1,256,970 net register tons, have crossed the Bosphorus during the above-mentioned period, and among them there were 87 British ships with 198,668 net register tons and 115 Italian ships with 295,223 net register tons, etc.

Statistics about other Near Eastern ports are also available. Shipping at Alexandria during the first five months of 1931 included 765 ships representing 2,011,766 net register tons with a decrease of 87 ships and 162,515 tons. The British flag constituted 181 ships and 465,566 net register tons, coming immediately after the Italian Mercantile Marine with 195 ships and 483,939 net register tons, and followed by France, Germany, Greece, etc. Shipping at Syrian ports during the period from January to April, 1931 included the arrival of 461,322 tons at Beyrouth, 186,906 tons at Tripoli, and 157,802 tons at Alexan-

Ports	Passenger Vessels		Cargo Vessels		Various		Total		Sailing Vessels	
	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons
Pireaus	486	382,823	139	153,360	9	326	634	536,509	562	25,464
Patras	182	101,137	30	40,502	6	1,018	218	142,657	72	4,215
Salonica	90	67,015	52	65,502	—	—	142	132,517	113	3,845
Volos	124	52,761	31	35,142	—	—	155	87,903	214	4,784
Corfu	77	60,878	4	5,088	—	—	81	65,966	14	807
Syra	125	55,635	14	23,469	—	—	139	79,104	93	1,651
Heraclion	45	34,144	12	13,994	—	—	57	48,138	25	1,334
Chios	84	52,429	4	5,262	—	—	88	57,691	227	3,459
Andros	16	7,016	5	9,247	—	—	21	16,263	43	839
Mytilene	63	31,759	9	5,425	—	—	72	37,184	121	2,958
Samos	32	18,627	3	5,279	—	—	35	23,906	6	224
Canée	43	37,947	4	4,574	2	90	49	42,611	24	1,284
Calamata	35	18,439	15	15,232	2	110	52	33,781	45	1,933
Cavalla	41	23,734	12	3,653	—	—	53	27,387	24	722
Rethymnon	35	21,276	2	2,033	—	—	37	23,309	9	625
Preveza	63	17,025	—	—	3	862	66	17,887	15	949
Chalkis	75	27,640	4	3,218	—	—	79	30,858	98	2,098
Dedeagatch	26	13,263	12	3,227	—	—	38	16,490	70	864
Argostoli	22	9,046	5	10,028	—	—	27	19,074	12	783
Zante	24	8,884	2	2,034	—	—	26	10,918	50	925
Ydra	102	18,914	1	1,291	—	—	103	20,205	4	105
Kea	—	—	25	26,596	4	28	29	26,624	18	215
Limnos	19	9,769	—	—	—	—	19	9,769	42	647
Laurium	35	5,585	6	8,648	—	—	41	14,053	14	408
Spetsai	36	9,650	2	4,617	—	—	38	14,267	16	835
Ithaque	12	2,432	1	2,579	—	—	13	5,011	6	119
Kymi	8	1,728	5	1,199	—	—	13	2,927	33	778
Totals	1,900	1,089,556	399	451,019	26	2,434	2,325	1,543,009	1,970	62,820

The Greek Government is considering the opportunity of developing the present dry-docking facilities at Pireaus, with a view to fitting that plant with machinery so that small 1,000 gross tons ships could be built in the country.

The Société Anonyme G. Hersent, which has built the Port of Pireaus, and which had been asked to prepare a scheme for the construction of the New Port at Salonica, has now been

dretta. The British flag, in spite of the fact that Syria is under French control and that the French have created a fine set of steamship services with new and up-to-date tonnage, occupies the first place in all the Syrian ports, and it would appear that the question has been taken up by the French authorities, which have decided to increase the connections also between Syrian and French North Atlantic sea ports.

Kiel Canal Traffic in June, 1931

Traffic through the canal in June showed an increase of 8.7 per cent. in the number of vessels and 12.20 per cent. in the net tonnage capacity compared with May. In comparison with June, 1930, however, there is a decline of nearly 500,000 net register tons. The actual figures are as follows:—

	No. of Vessels.	Net Reg. Tons.
June, 1931	4,877	1,747,713
May, 1931	4,486	1,557,641
June, 1930	4,851	2,240,072

Steamers and motor vessels represented 91.08 per cent. of the total tonnage capacity.

Of the 4,877 vessels using the canal, 2,037 with an aggregate

of 1,565,477 net register tons were registered seagoing steamers, comprising:—

1,949 freight and passenger vessels of 1,561,401 net register tons; 83 steam tugs of 2,813 net register tons; 4 fishing steamers of 532 net register tons.

Further, 2,442 sailing vessels aggregating 125,477 net register tons; 90 lighters and barges of 29,069 net register tons; 308 pleasure and government vessels of 27,690 net register tons.

The vessels were loaded as follows: 35 with passengers; 24 with cattle; 188 with coal; 100 with stone; 71 with iron; 409 with timber; 769 with grain; 21 with ore; 588 with other bulk goods; 923 with general cargo; 93 with miscellaneous cargo; 1,656 (34 per cent.) empty or in ballast.

North-East Coast Notes.



Tyne Improvement Commission: S.S. "City of Delhi," discharging overside near Riverside Quay, Albert Edward Dock.

Proposed New Coaling Staith.

LAST month brief reference was made to the scheme for the construction of a new coaling staith in the Tyne at the west end of the Northumberland Dock. The principle of the scheme has been approved by the Tyne Improvement Commission.

The staith, it is intended, shall be so constructed as to accommodate any size of wagon despatched from any pit in the country. The sidings are to be arranged to permit trucks up to a capacity of 20 tons being readily handled. Electric tippers will receive wagons up to 20 tons and discharge them into vessels at rates reaching up to 1,000 tons per hour, while the band conveyors will deal with cargoes at the rate of 500 tons per hour. There will be an immediate depth of water alongside of 25-ft. at low tide and 40-ft. at high water, and ultimately there may be 30-ft. at low water, and 45-ft. at high water. Large vessels will be accommodated at the staith, and adjacent to it will be a smaller staith for the bunkering of trawlers and vessels of similar capacity.

Depth of the Entrance to the Tyne.

Mr. Richard Aughton, General Manager of the Tyne Improvement Commission, speaking recently, made the interesting announcement that only one port had a greater depth at its entrance than the Tyne and that was Southampton. In 1850 the depth of water at the bar at low spring tides was only 6-ft.; now it was 30-ft. He mentioned that the Tyne Improvement Commission had spent 7½ million pounds in making the river, and 20 millions in maintaining and developing the work created.

He said: "In these bad times I am glad to know that the port authorities are taking big views of the future. In the words of Viscount Grey, who is a member of the Commission and takes a keen interest in its work, 'they are looking to the future, trusting to the future, and preparing for the future,' so that when the boom in trade comes they will be ready for it." In this connection he pointed out the fact that Gateshead and Newcastle quays are being largely extended, and that shortly it is hoped work will be commenced on the new coal staith outside Northumberland Dock. Other big schemes also are under consideration.

Blyth Harbour Commission.

After the ordinary business of the July meeting of the Blyth Harbour Commission had been transacted, the Chairman, Mr. Ridley Warham, welcomed a number of visitors interested in the trade of the North-East Coast, who were entertained to lunch and afterwards accompanied the Commissioners on an inspection of the harbour. Amongst others who were present were Mr. H. M. Clark, Mr. Basil Bryant, Mr. Leslie Runciman (Chairman of the North of England Shipowners' Association), Mr. F. Aitchison (Cory Colliers, Ltd.), Mr. Herbert Shaw (Secretary of the Newcastle Chamber of Commerce), Mr. T. W.

Crozier (Cowpen Shipyard), Mr. Vincent Thompson, and Mr. Percy Parmeter. During the tour of the harbour the vessel was stopped from time to time, to enable the party to examine more closely the recent improvements.

At the meeting it was reported that the dredger "Cowpen" was put into commission at the end of March after considerable overhaul. Since that date 14 acres of the entrance channel had been dredged, and the dredger was now engaged on the western side of the approach Channel outside the piers.

A summary of the coal exports for the six months, as well as those for June were submitted with the comparative figures for 1913 and 1930. They were as follow: June—1931, 297,789 tons; 1930, 334,796 tons; 1913, 465,748 tons. Total for the six months ended June—1931, 2,182,556 tons; 1930, 2,501,441 tons; 1913, 2,337,443 tons. These latter figures show a decrease of 7 per cent. on 1913, and 13 per cent. on the 1930 figures.

Big Cargo from the Wear.

One of the largest cargoes of coal ever taken from Sunderland was carried by the "P.L.M. 20," a French steamer which loaded at the South Docks. She had on board 8,850 tons of cargo and bunkers when she sailed, on July 16th, bound for Algiers, with a draft of 25-ft. 2-in.

Shipments from the Tees.

July shipments of iron and steel from the Tees totalled 42,422 tons, comprising 9,580 tons of pig-iron, 3,889 tons of manufactured iron, and 28,953 tons of steel. The aggregate loadings in June amounted to 51,176 tons, of which 12,038 tons was pig-iron, 7,101 tons manufactured iron, and 32,037 tons steel. Scotland was the largest receiver of pig iron in July, accepting 3,238 tons, Denmark being second with 970 tons, and Japan third with 480 tons. The Union of South Africa was the principal buyer of manufactured iron with 296 tons, while Southern Rhodesia took 264 tons. The chief customers for steel were: India, 3,735 tons; Portuguese East Africa, 2,492 tons; and the Union of South Africa, 1,733 tons.

Personalia.

Mr. Francis A. E. Samuelson, of Breckenborough Hall, Thirsk, has been elected Chairman of the Tees Conservancy Commission in succession to the late Sir Hugh Bell. Mr. Samuelson was first elected to the Commission in 1901 as a representative of Middlesbrough payers of Tees dues. He is a son of the late Sir Bernard Samuelson, who began the works of that name, now absorbed in the Dorman Long combine. Mr. Samuelson is a director of Dorman Long and Company.

Mr. R. J. Nichol has been elected Chairman of Messrs. R. Hood Haggie and Son, Ltd., the well-known Tyneside rope firm, in succession to the late Mr. Stevenson Haggie.

Traders Co-ordinating Committee and Lower Dock Charges

MAJOR-GENERAL LONG, of Lever Bros., Port Sunlight, owners of the new Bromborough Dock, of which a description has already appeared in *The Dock and Harbour Authority*, and chairman of the Traders Co-ordinating Committee on Dock Charges, has sent a letter to all the principal port authorities of the country, urging consideration of lower dock charges. The last occasion on which shipowners and traders made a general approach to port authorities was in 1922. On that occasion the attention of port authorities was drawn to the important reductions that had taken place between 1920 and 1922 in wholesale prices, the cost of living, and in shipping freights. The committee are sensible of the fact that, during the year 1923, important reductions in dock charges took place at many ports. In particular dock dues on ships at railway-owned ports were reduced by agreement until they stood by the end of 1923 at 60 per cent. above the 1913 level. With one or two exceptions, however, there have been no reductions of any importance in dues on ships during the last seven or eight years, a period during which material changes have taken place in wholesale prices, in shipping freights, and in other factors affecting the industrial prosperity of the country. In one or two instances dues on shipping are actually higher to-day than in 1923. Tramp shipping freights in June of this year show a reduction of over 33 per cent. compared with the average for 1924, and of over 19 per cent. compared with the average of 1913. For the last six months more than three million gross tons of British Shipping have been laid up idle in United Kingdom ports. Major-General Long quotes from "Philip's Dues and Port Charges," the following table of maximum dues on shipping per net ton register, at various ports.

Name of Port	1913 Pence	1923 Pence	1930 Pence
Blyth	6	12	12
Bristol	13½	21	21
Cardiff	9	14½	14½
West Hartlepool	13½	24	19½
Hull	12	19½	19½
Liverpool	17.5	30.5	30.5
London	16	23.5	21
Manchester	15	23	23
Middlesbrough (Tees)	6	9	8
„ (Dock)	12	19½	19½
Newcastle (Commissioners' Dock)	12	19½	16.5
„ (Tyne Dock)	12	19½	19½
Southampton	9	15	14½
Sunderland (Port Dues)	3	4.5	4½
„ (Dock Dues)	12	19½	18
Ardrossan	4½	6	6
Dundee	16	28	28
Glasgow (In and Out)	8	13.3	16
Graugemouth	3	4½	4½
Granton	7	12	12
Greenock	13	25½	23
Leith	10	18	16
Belfast	4	9	12
Londonderry	9	13½	13½

Thus, taking United Kingdom ports as a whole there has been very little change in the level of dock charges during the last seven or eight years. Sufficient stress, he says, perhaps has not been laid on the fact that there are sheltered undertakings such as docks and harbours, as well as sheltered workers, and it is submitted that these industries should not take advantage of their sheltered position to maintain at a high level not only those charges which are based on the cost of the sheltered labour which they employ, but also those charges which are practically independent of labour costs. The committee feel there can be no justification for continuing the present increased dues on ships, and it may be observed that the bulk of the capital spent in constructing the docks is capital raised before the war.

The committee, therefore, desire to draw the attention of individual dock authorities, both public trusts and railway companies, to the absolute and immediate necessity for them—notwithstanding the statutory powers which they may possess—to reduce the charges for their services. In the long run lower dues should pay for themselves. They will attract trade and make up for the loss of revenue in the reduction of dues.

As an illustration of the incidence on cargo of dock dues on ships, two tables have been prepared for the committee, which show that port disbursements in 1929 were, per net register ton, 50 per cent. higher than before the war, and per ton of cargo, 40 per cent. higher. The committee wish also

to draw attention to the following comparative costs of 1929 dues and other disbursements, in pence per net register ton, on ships discharging whole cargoes of grain:—

	Dock Dues	Other Disbursements	Total
Belgium	5.00	6.44	11.44
France	21.29*	6.67	27.96*
Holland	5.02	9.31	14.33
Germany	10.81	9.39	20.20
United Kingdom	19.73	12.67	32.40

* Including 14.08 pence dues on cargo.

The committee urge port authorities to disregard the statutory powers which place them in a privileged position, and to reduce dock and harbour dues by the quickest possible stages to a corresponding level. While dock and harbour dues are the main item in the port disbursements, other charges in the ports, such as towage, pilotage, etc., are also excessive. The committee urges port authorities, where they are in a position to do so, to use their influence to secure reductions in these also, but would submit that their most effective way of doing so would be by setting the good example of reducing their own charges.

Two tables give the following figures for port disbursements on vessels discharging grain at United Kingdom ports in 1910-12 and in 1928-29:—

COST IN PENCE.

		Per N.R.T.	Per Cargo Ton
1910-12.			
Pilotage	2.436	1.086	
Towage	1.814	0.835	
Harbour Dues	13.322	5.937	
Light Dues	1.964	0.875	
Agency Fee	0.752	0.335	
Total	21.717	9.678	
Sundries	1.369	0.610	
1928-29.			
Pilotage	2.902	1.196	
Boatman	0.751	0.310	
Towage	2.488	1.025	
Harbour Dues	19.732	8.132	
Light Dues	3.578	1.474	
Agency Fee	1.572	0.648	
Total	32.400	13.352	
Sundries	1.381	0.569	

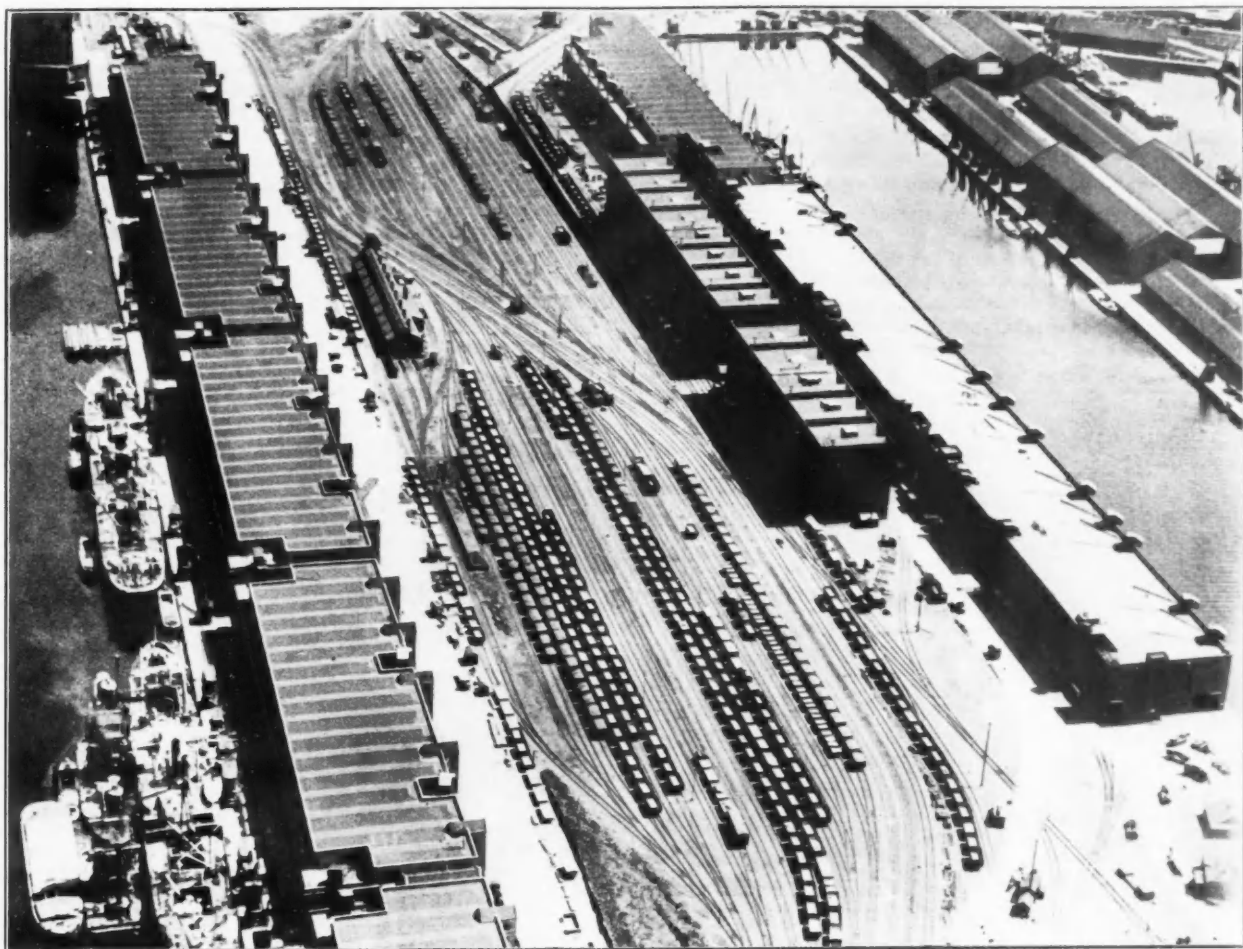
In the above and following tables pilotage includes pilotage, dock pilotage, mooring and unmooring, and boatman, except when the last-named appears as a separate item; harbour dues include tonnage or harbour dues, dock dues, local lights, conservancy dues, quay dues, etc. The total tonnage upon which the figures are compiled was, in 1910-12, 48,566 net register tons and 108,982 cargo tons, and in 1928-29, 76,329 net register tons and 185,215 cargo tons.

An additional table gives the increase per cent. of 1928-29 ports disbursements of vessels discharging grain at United Kingdom ports compared with 1910-12. This is as follows:—

	Per N.T.	Per Cargo Ton
Pilotage and Boatage	50.0	38.7
Towage	32.8	22.8
Harbour Dues	48.1	37.0
Light Dues	82.2	68.5
Agency Fee	109.0	93.4
Sundries	1.5	6.7
Total	49.2	38.0

It will be observed that the increases per cent. appear lower when calculated per cargo ton than when calculated per net ton. This is due to the fact that the modern cargo vessel has a better ratio of deadweight carrying capacity to net tonnage. For the vessels in the table the improvement is over 8 per cent. The increase in the cost of towage shown in the table is only 32.8 per cent. based on net tonnage and 22.8 per cent. when based on cargo tons; this is misleading. In the pre-war example 18 ships out of 26 were towed. In the post-war example only 21 ships out of 34 were towed. The average cost of towage per towed ship was £21 1s. 4d. in 1910-12 and £37 13s. 7d. per towed ship in 1928-29, an increase of 78.9 per cent.

Notes from the North



New Barns Railway Sidings, between No. 8 and No. 9 Docks, one of several points at which the Manchester Ship Canal Company's Railways connect with the Main Line Systems.

New Docking Device.

MR. ERNEST A. WEAVER, who is well known in Liverpool shipping circles, has invented an ingenious piece of mechanism which should prove very useful to navigating officers, especially when docking or undocking their ships. It consists of an appliance to be fitted on the ends of the navigating bridge, which, when set to the required draft by turning a knob, immediately indicates by means of a sighting arm the position of the stem or stern relative to any object in the near vicinity. At present, the navigating officer may be unable to see the exact position of the stem or stern from the bridge, and have to rely on calling out or 'phoning, which takes up time, generally just when moments are most valuable. The new device is designed to obviate this loss of time. Accidents have occurred from time to time when the officer or the pilot manoeuvring a vessel in confined waters has not been able to know how much to give her a touch ahead or astern, with the result that either the bow or stern in swinging has perhaps hit the dock wall. With Mr. Weaver's apparatus in position on the bridge it will be possible to gauge the distance accurately, and take the necessary action. There are no complicated parts in the device and its simplicity and effectiveness are remarkable. A demonstration was given recently at 213, Royal Liver Building, Liverpool.

Liverpool Shipping Week.

In the Liverpool Shipping Week Exhibition, which will be held this month (September) a special feature will be the development of the port of Liverpool, to which the Mersey Docks and Harbour Board is making a striking contribution. It will trace the port evolution from the time when there was only the pool to shelter ships, right up to the present day when the pool has disappeared and eight miles of docks have taken its place. This section will show the changes in shipping, and through models and illustrations the elaboration of sail to combined steam and sail, and then by stages to the motorship of to-day. The Canadian Pacific, Cunard, and White Star Lines will have five liners in dock for the public to inspect, and the Wallasey Corporation Ferries Department will send the "Royal Iris" on two-hourly trips in the Mersey, during the whole of the week. It is intended to remove the impression, strong to-day in the south, that Liverpool as a port is declining

since a number of the largest liners went to Southampton. Last year Liverpool dealt with 25 per cent. of the passenger traffic to and from places out of Europe and carried over 1,000,000 coastwise passengers. Shipping Week will be used to tell the country that Liverpool is still a great port, handling more exports than London, Southampton, and any other two ports combined.

A Troublesome Lock Gate.

An unusual scene was witnessed in the Manchester Ship Canal near to the Old Quay Yard, Runcorn, recently. A lock-gate, which had been brought from Latchford for repairs, was placed on a specially-made slipway, and when it was desired to remove it, difficulty was experienced in doing so. Eventually four tugs were brought on the scene, and after much trouble the gate was removed.

Future of Birkenhead Ferry.

At a special meeting of the Mersey Tunnel Joint Committee, it was decided that the ferry undertaking of the Birkenhead Corporation be worked and managed by the Birkenhead Corporation for, and on behalf of, the Mersey Tunnel Joint Committee in accordance with such directions as may from time to time be given by the Tunnel Committee. The Tunnel Act provides that the Birkenhead ferry undertaking, or such part of it as the Birkenhead Corporation and the Tunnel Committee may agree upon, shall for 21 years from the opening of the tunnel for public traffic be worked and managed by the Birkenhead Corporation, for, and on behalf of, the Tunnel Committee, as the Tunnel Committee will receive the revenue and will be responsible for the cost of working and managing the undertaking, and for interest and sinking fund charges. The resolution was carried by a majority consisting of the Liverpool representatives on the committee, and was opposed by the Birkenhead members, on the ground that the Corporation desired to retain full control over the passenger service, and the entrance to Birkenhead. The Birkenhead Ferries contributed £15,087 towards rate relief last year, for the year ending March 31st, the equivalent to a rate of 4½d. in the £. For the year ending March 31st, 1930, the department contributed £14,000. The maximum which the town can be called upon to pay to the tunnel is 5½d. in the £ of the rates, but it is hoped that this latter figure will never be needed.

Notes from the North—continued

The Tunnel Joint Committee feels that any loss to be sustained by the ferries as a consequence of the opening of the tunnel, should not be borne by the Birkenhead Corporation. On the other hand, any profit should go towards a reduction of the burden on the Liverpool and Birkenhead Corporations.

Canal Official's New Office.

Mr. K. R. Brady, who for the last few years has been in charge of the publicity department of the Manchester Ship Canal Company, Ltd., has been appointed general manager and secretary of the Manchester Development Committee.

Dee Embankment Scheme.

The Dee embankment scheme, which aims at connecting the Wirral and North Wales coasts for both rail and road traffic, and would involve the expenditure of several millions of pounds, is attracting notice far afield. The Mansion House Association on Transport, which meets in London, had the subject before it recently, and passed the following resolution:—"That the Mansion House Association supports the proposal to urge the Minister of Transport to hold a public inquiry into the scheme to construct an embankment across the river Dee approved by the Liverpool Local authorities, and in dealing with this scheme consideration should be given to the question of rail-borne goods traffic."

Liverpool's Possibilities as a Fishing Port.

Liverpool City Council has called for a report on the following motion:—"That the Mersey Docks and Harbour Board be approached with a request that they co-operate with the City Council to make Liverpool a real fishing port by providing at the Liverpool docks the necessary facilities to encourage the fishing industry, and thereby make Liverpool one of its great centres."

Wallasey Ferry Engineer.

Mr. R. R. Rennie, Wallasey Corporation Ferries Engineer, whose retirement from that position is due to take place, has been requested to continue his services until the end of March next on account of the necessary supervision of the construction of a new ferry boat.

Liverpool Quay Watching Charges.

Watching charges on the Liverpool dock quays continue to be the subject of agitation by some of the Liverpool trade interests and the matter having been thoroughly investigated by the Transport Committee of the Liverpool Chamber of Commerce, Mr. R. V. Edwards (the chairman) stated recently that he had the opportunity of seeing the working of the quays, especially at the Gladstone Dock. He spent some hours there taking in all the details and also getting information from various sources, foremen and employees, at the dock, and it seemed to him that it was impossible to do away with watching on the quays. It would be offering a premium for pilfering. In his opinion, watching would have to continue. He would like to suggest to the Mersey Docks and Harbour Board that the numbers of people who frequented the quays of Liverpool should be regulated, as there was no control over them and they could not be interrogated. How pilferage was so small was amazing to him.

First Manager of Mersey Tunnel.

Mr. B. H. M. Hewett, the present engineer-in-charge of the Mersey Tunnel, has been appointed to the position of manager of the tunnel when open for traffic. The appointment carries a salary of £1,800 a year, with a retainer of £700 a year for special services which may be necessary. The appointment is for at least twelve months, and if possible for two years. Mr. Hewett has been engineer-in-charge of the Mersey Tunnel works, under Sir Basil Mott, from the beginning, about five years ago. His first experience of tunnel construction was under Mr. Mott (as he was then) in connection with the Central London Railway, and afterwards the City and South London Railway. In 1904 he went to the United States for the Pennsylvania Railroad, and was placed in charge of a tunnel under the North River, New York. He remained in the States until 1912, when he went to Mexico, for another tunnelling job. Later he returned to the States, bored more tunnels, and became a director of the firm who acted as consultants for the great Holland tunnel. In 1925 he returned to this country.

New Canal Regulations.

The Manchester Ship Canal Company and Weston Canal announce that they intend to apply to the Minister of Transport for the confirmation of certain bye-laws for regulating the loading, conveyance and landing of Petroleum Spirit and Carbide of Calcium in and upon the Bridgewater Canals and the Runcorn and Weston Canal.

Morecambe Old Harbour.

The Old Harbour Committee of Morecambe and Heysham Corporation have recommended the Town Council to approve the draft heads of arrangement between the Corporation and the L.M.S. Railway Company for the acquirement by the former of old Morecambe Harbour premises and adjoining lands at a total price of £57,000, and have resolved that the railway company be informed "that this committee is unable to recommend the Council to purchase the Old Harbour premises before purchasing the additional land adjoining, since the purchase and development of the whole of the land is regarded by the committee as a composite scheme." At a later meeting, the committee considered an amended layout plan prepared by the architects showing the proposed development of the Old Harbour site.

Seacombe Ferry Improvement.

Good progress is being made with the next section of the £100,000 Seacombe Ferry improvement scheme which consists of a new booking hall and clock tower. The old clock tower served also for hydraulic power lift purposes. The new one will restore the "landmark" which for so long a time was familiar. Tenders have been received by the Ferries Committee who recommend the acceptance of that of Messrs. J. Henshaw and Sons, Liverpool, for £25,079. The new clock tower will, like its predecessor, also serve as a hydraulic tower.

A Prosperous Concern.

According to the annual report of the Manchester Dock and Warehouse Extension Co., there is a balance at credit of revenue account of £36,598. The income of the company is derived from rents which have no element of uncertainty in them, inasmuch as they are derived from properties provided by them but let on long leases from the first to the Manchester Ship Canal Company. The properties will pass to the Canal Company at the expiration of the leases. The Dock and Warehouse Company's gross receipts in 1930-31, including bank interest and transfer fees, were £45,271, and the net revenue, after charging £10,000 for debenture interest, £853 for management expenses, and £1,306 as the annual instalment to sinking funds for debentures and share capital, was £32,512. This last-mentioned sum compares with £32,816 in 1929-30. The Ship Canal Warehousing Company is a smaller concern, but it is financed on the same lines. Net revenue has been £9,848, compared with £12,905 in 1929-30.

Liverpool Cargo Hustle.

The motor ship "Swanley" recently arrived in the Mersey on a Monday, about 7.30 p.m., with about 8,500 tons of bulk wheat. By use of the Gladstone deep-water lock she was able to dock immediately upon arrival, and proceeded to her discharging berth at the Alexandra Dock grain storage, where discharging commenced at 11 p.m. that evening. By noon on Wednesday she had finally completed discharge of her cargo and was ready for sea. Altogether a very creditable performance.

New Facilities at Langton Dock.

Arrangements have been made by the Mersey Docks and Harbour Board to expedite the shipment of complete locomotives and railway carriages, by the provision of improved railway facilities at the Langton Branch Dock. Mr. E. G. Brownbill, Chairman of the Traffic Committee, announced at a recent meeting of the Mersey Docks and Harbour Board that the Board and the London, Midland and Scottish Railway Company, with the co-operation of the Bootle Corporation, had recently come to an arrangement whereby difficulties which from time to time had arisen in the shipment of out-of-gauge railway traffic at some of the north docks of the Liverpool dock estate, had been overcome, and in future it would be possible for such traffic conveyed by railway to be hauled direct to the east quay of the Langton Dock for shipment in any dock, either at Liverpool or Birkenhead, by means of one of the floating cranes belonging to the Board. The arrangements consist of a new direct rail connection between the Alexandra Dock station of the London, Midland and Scottish Railway Company, across Regent Road, Bootle, to the east quay of the Langton Dock, where the railway lines have been so altered as to permit of two lifts being presented for lifting by the floating crane, thus shortening very considerably the time which the cranes necessarily took in making their lifts, as well as giving ample storage and shunting accommodation for loaded and empty wagons. The new arrangements have been designed to meet the present-day demand for the conveyance by railway and shipment of complete locomotives, carriages, etc., instead of in parts as formerly, and should prove of great advantage to locomotive and railway carriage builders, and others in this country, as well as to shipowners using the port.

Notes from the North—continued

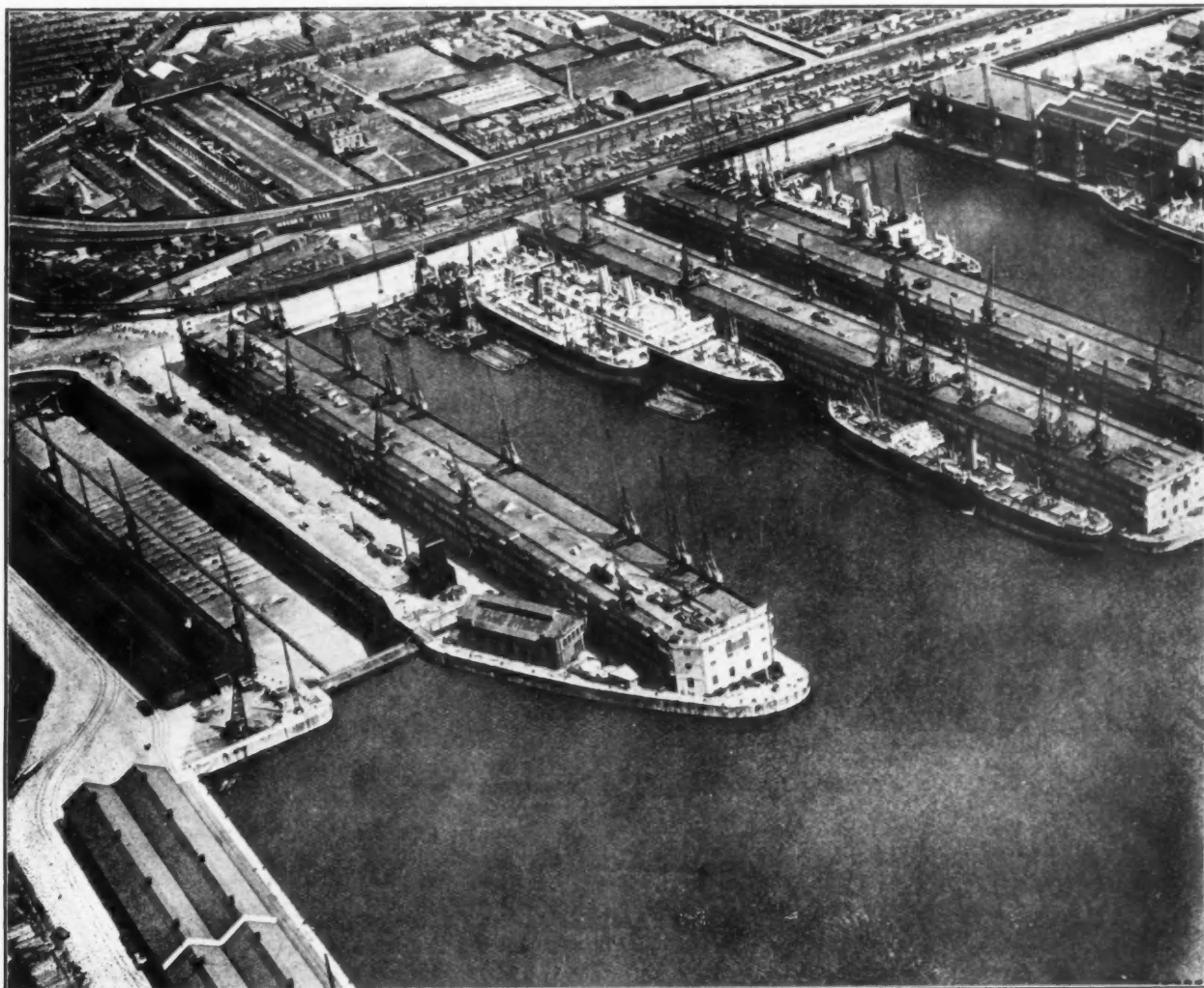
New Weaver Navigation Bridge.

Joseph Parks and Son, constructional engineers, Northwich, have received the order for the construction of a 250-ft. span swing bridge over the River Weaver at Acton and Weaverham for the Weaver Navigation Trustees. The bridge, which forms part of the improvement by the County Council of the Whitchurch-Warrington main road, is to the design of Colonel J. A. Saner, Mem. Inst. C.E., consulting engineer, who is engineer and general manager of the Weaver Navigation Trust, and is to be constructed on the circular pontoon supporting system, which he has so successfully employed on other bridges, with outstanding economy in operating costs. In the case of the Acton and Weaverham Bridge, the dead weight, amounting to 800 tons, will be completely operated (opened and closed, including the withdrawal and replacement of the wedges) for less than a single unit of electricity. British steel will be used throughout the construction.

standing the very substantial economies already effected in the working of the dock estate, it would be well to inquire into the general expenditure and method of carrying out the work of the Board with the object of seeing whether anything further can be done to reduce expenditure. The Board has therefore decided that a special committee be appointed to inquire into the general expenditure and method of carrying out the work of the Board, and that the following gentlemen do form such committee, viz., Messrs. H. L. Roxburgh, J. L. Tilman, J. G. B. Beazley, Lieut.-Col. A. Buckley and Sir Thomas Brocklebank.

Lower Master Portage.

Mersey Docks and Harbour Board have considered the adoption of a recommendation of the Traffic Committee that the following master porters' rates on cocoa and cocoa husks in bags should be adopted in lieu of those at present in force:



Port of Liverpool: Gladstone Docks and Graving Dock.

Midland Visitors to the Docks.

Representatives of the most prominent importers and exporters in the Birmingham district visited Liverpool recently, for a tour of the Dock Estate, to observe Liverpool methods of handling traffic.

Mersey Sewage Problems.

Mersey Docks and Harbour Board and the Merseyside municipal authorities hope to get the problem of discharge of crude sewage into the river investigated by the Department of Scientific and Industrial Research, through the Water Pollution Research Board. It has also been agreed that the Government, the Dock Board, Liverpool, Bootle, Birkenhead, Wallasey, and other authorities shall contribute to the expenses of the Research Board.

In Quest of Economy.

Some little time ago it was suggested at a meeting of Liverpool shipowners that a complete reorganisation of the various departments in the Mersey Docks and Harbour Board was desirable to improve their operating efficiency. In view of the continued depression in trade, it was decided at a recent meeting of the chairmen of the Dock Board committees that, notwith-

Cocoa and cocoa husks in bags not exceeding 7 cwts. per draft of five bags, 54d. per ton delivery after having been stowed on the quays. Exceeding 7 cwts. per draft of five bags, 50d. per ton delivery after having been stowed on the quays. The rates proposed mean a reduction of 8½d. per ton on the heavier bags, and 4½d. per ton on the lighter bags.

Ribble Dock Navigation.

On the occasion of the annual inspection of the Ribble Dock undertaking, members of the Preston Town Council had the opportunity of seeing at close range the great progress which has been made in recent months, in providing for new classes of traffic. The tour of the Ribble waterway was made in the new Corporation launch tug Lucas. This boat had only come into service from the builders that day. It is claimed to be a handier vessel than the Enterprise II., which it succeeds, being 550 indicated horse-power, with a length of 96-ft. 6-in., and it is fitted with the latest devices for towing. During the trip the company had the comparative charts of the river and estuary explained to them by the Ribble Engineer, and they also heard details of the trade at the dock during the past year from the Traffic Manager. Visiting the pumping station, the councillors saw sets of old steam engines of the twin-

Notes from the North—continued

tandem type carrying out the task of providing hydraulic pressure for the dock gates, cranes, and other equipment on the docks. On the dock side a large boat was seen discharging bitumen in liquid form heated, into special tanks close by. It is conveyed to its final destination, whether for road or construction works, in tank wagons and is not allowed to solidify.

On the west side of the dock estate, where there is storage for millions of gallons of petrol, the work of sinking the massive foundations for the tower which is being built on the north bank of the river to carry the electric cable from the generating station to Carlisle was seen. In order to give ample clearance for shipping, the towers on either side of the river are being built 250-ft. high, which, allowing for sag, will give 250 yards elevation. Caissons have been sunk to the rock, and in one instance, owing to the unevenness of the rock face, some difficulty is being experienced. Divers have tried to grapple with the problem, and explosives have also been used, but without avail, and now the effect of grinding by the use of pressure is being tried.

Alderman Lucas, chairman of the Ribble Committee, informed the company that powers had been obtained to extend the training walls to the 16th mile. The work would cost £100,000, and although they had not succeeded in getting assistance from the Unemployment Grants Committee, the Ribble Committee would soon be going into the matter with a view to making an early start, possibly next spring.

Mr. James Barron, engineer to the Ribble Navigation, explained that the river bed at Lytham from January to June this year had ranged from 1-ft. 6-in. to 3-ft. 5-in. above sea low water, the average being an inch better than the corresponding period of last year. The first eight miles from Preston was better than it has been hitherto, being 8½-in. below zero for the first six months of this year, in spite of the dredging being done by only two sand pumps, instead of the usual three, during the five winter months. In the section eight to eleven miles both water area and average depth had increased, the low water area by 8½ acres, and the average depth from 7-ft. 9-in. to 8-ft. 1½-in. There was also an improvement to

the end of the training walls at 14½ miles, the depth having increased from 10-ft. 5-in. to 11-ft. 8-in., this satisfactory improvement coming from natural causes alone. Mr. Barron exhibited charts showing how the deep water course had worked southwards, which made the entrance more difficult to navigate. It was necessary to extend the training walls a mile and a half further, in order to carry the bar, where the depth varied from 2-ft. to 4½-ft. and showed no signs of deepening beyond that depth out into deep water, and make the channel as good at the sea end as it is in the higher reaches.

Mr. J. G. Merriweather, Ribble Navigation Traffic Manager, stated the total number of vessels dealt with during the year was 1,523, with total net registered tonnage of 507,588. The average was seven tons per vessel over the previous year. Foreign vessels numbered 243, with an average tonnage of 1,098, which was an increase of 89 tons per vessel compared with last year. The increase of average tonnage of foreign vessels entering the port compared with 1914, was 64 per cent. The largest general cargo vessel had a cargo of 5,614 tons—a record for the port. They had also received 20 ocean-going petrol tankers, the largest of which was 6,464 gross tonnage and length 416-ft. The total imports for the year were 610,928 tons, which was a decrease of 61,530 tons. There were heavy decreases in wood-pulp and timber, but a substantial increase of 41,300 tons of petrol, the total import being 144,499 tons. A new traffic, liquid bitumen, had brought 6,172 tons. The total import of live stock was 75,268 head, a decrease of 6,522, due no doubt to the general trade conditions prevailing. Exports had increased by 46,769 tons to 217,651 tons, mainly in coal and coke. The income from the undertaking totalled £223,750, a decrease of £22,547; working expenses were down by £12,9...71, and the sum of £52,532 was available towards loan charges, the net deficiency being £35,580. It was absolutely essential, whilst maintaining their efficiency, that economy should be strictly practised. Shipowners and traders were looking for some relief in dock charges. It was difficult to bring down costs and, at the same time, maintain the present standard.

*Hull and the Humber**Humber Training Walls Scheme.*

THE Hull Corporation's Bill for the construction of a road bridge over the River Humber to connect the East Riding with North Lincolnshire, at an estimated cost of nearly two millions sterling, having, after a prolonged hearing, survived the various stages in the House of Commons, now goes to the House of Lords, where the battle between the land interests and the river interests is to be fought over again. The Select Committee will consist of Viscount Chelmsford (who will preside), Viscount Gage, Lord Addington, Lord Fairlie, and Lord Marks. The first sitting has been fixed for November 11th. Lord Chelmsford is a Socialist peer with a fine record of public service to his name. From 1916 to 1921 he was Governor-General and Viceroy of India, and prior to that had held the appointments of Governor of Queensland and Governor of New South Wales. In 1924 he was First Lord of the Admiralty. Lord Marks is a well-known consulting engineer and patent expert and has written several text books on engineering and allied subjects.

In the meantime efforts are being made to bring about some measure of agreement as to the future of the River Humber and the construction of training walls in the upper part of the river which the House of Commons Committee consider should be taken in hand by the proper authorities at the same time as the construction of the bridge. To this end the Board of Trade summoned a conference of the various river interests, those attending including the Chairman of the Humber Conservancy Commissioners (Mr. J. H. Fisher, J.P.), together with the engineer and solicitor, representatives of the Aire and Calder Navigation, the Trent Navigation and the Port of Goole, all of whom consider that the navigation of the river is likely to be adversely affected to the detriment of shipping and more particularly to the West Riding Port of Goole. The Hull Corporation were not invited by Mr. Graham (President of the Board of Trade) to attend the Conference, but this is not regarded with surprise at Hull in view of the fact that the question of the preparation of a scheme for the construction of training walls for the protection of the navigable channel of the Humber is one which concerns primarily the various navigation authorities and the Government departments alone. A scheme which has been in existence for some years is no doubt a very desirable one, but unfortunately the Humber Conservancy Commissioners have not sufficient funds to under-

take it, and the only hope of its being carried out lies in the possibility of the Government making a grant in aid under its plan to relieve unemployment. It is understood that the Government is by no means unsympathetic, but before anything can be done there must obviously be common agreement, and a definite scheme prepared for the approval of the Minister to secure financial aid.

New Bridge over the Old Harbour Opened.

A fine new bridge to span the Old Harbour, by which the outflow of the River Hull into the Humber is known, has first been formally inaugurated by the Sheriff of Hull (Alderman R. W. Wheeldon). The bridge is of the Scherzer type of bascule and replaces a horizontal drawbridge built in 1870. It crosses the River Hull slightly to the north of the old structure and has cost £103,000, which sum by the addition of acquisition of property, payment of compensation, etc., is brought up to £258,000, towards which there has been a State grant of £60,000. It has a width of 70-ft. and a rolling weight of 950 tons, and forms one of six bridges which connect Hull with the centre of the city. The view was expressed at the opening ceremony that had the Queen's Dock scheme been in contemplation when the bridge scheme was begun the site chosen would have been a different one in order to connect with the Queen's Dock's new roads.

Improvements at Bridlington Harbour.

The improvements carried out at Bridlington (East Yorkshire) Harbour by the Bridlington Harbour Commissioners have been completed at a cost of £10,845 as against an estimate of £11,500, thus effecting a saving of £655. Other expenditure amounting to £203 has been incurred, but the Treasury has declined to allow this sum for "grant" purposes, though it would still have been incurred had the estimated cost been reached. It was intimated by the Chairman of the Works Committee (Mr. S. Charlesworth) at the last meeting that there were certain other improvements which the Commissioners might have to carry out in the near future at an estimated cost of £9,300. These include the re-decking of the South Pier and general repairs to masonry, etc., and the expenditure on dredging the harbour. The Commissioners are to approach the Government for financial aid, for without it, it would not be possible to embark on any work however urgent or important at the present time.

Irish Harbour Matters



Limerick Docks.

Belfast.

Inspection of the Port by Business Men.

THE vast development of the port of Belfast and the facilities afforded to the shipping and trading community of the Capital of Ulster were revealed on the 6th August to a large party of local business men who were the guests of the Harbour Commissioners on board the steam tender "Musgrave" for a tour of inspection of the harbour and the various works in progress.

Many of the visitors were astonished at the transformation that has taken place within a comparatively short period in the schemes at present in hand for the development of the trade of the port. Not alone was the tour an enjoyable one, but it provided ample evidence of the successful efforts of the members of the Board in keeping the port abreast, if not ahead, of all its rivals in the completeness of the facilities provided.

From the very early stages the administration of the port of Belfast has been marked by vision and enterprise, and it was generally conceded by the guests on the "Musgrave" that at no time in the history of the harbour had they greater cause for satisfaction than at present when the Board is under the chairmanship of Mr. R. E. Herdman, D.L.

The first halt in the day's trip was made at the new shed at the West End of the Dufferin Dock, the visitors showing the greatest interest in the splendid facilities provided for the accommodation of merchandise. Later the Thompson Dock was inspected, a striking feature being the 150-ton hammer-head crane, installed and brought into commission last year, and seen for the first time by most of the guests.

A source of considerable interest was the reclaimed area at Connswater, which, it is hoped, will eventually be adopted for a flying station, while the many striking features of the new dock scheme, to cost £400,000, on the site of the old timber ponds, as well as the new quays and the huge flour mills for Messrs. Joseph Rank and Co., were viewed with pardonable pride by the party.

Afternoon tea was served on board the tender and the visitors returned to the landing stage after a very interesting and informative tour.

Growing Traffic.

At the meeting of the Belfast Harbour Board on the 6th August, the Harbour Master (Captain McIntyre) presented his usual report, which showed that 301 vessels arrived at the port during the period from 19th July to the 1st August, as follows:—Coastwise and cross-channel, 269; foreign 20; and non-trading 12.

The total tonnage of the vessels which arrive at the port from the 1st January to the 1st August showed an increase of 48,226, as compared with the corresponding period last year. The total tonnage of coastwise and cross-channel vessels during the seven months was 1,647,925, as compared with 1,617,198 in 1930, the foreign total 425,484 as compared with 393,720, while there was a decrease of 14,265 in the total tonnage of non-trading vessels during the period.

Dublin.

Butt Bridge to be Finished in April, 1932.

Mr. Joseph Mallagh, Engineer to the Dublin Port and Docks Board, explained to a meeting of the Board at which Mr. Walter Baird, Vice-Chairman, presided, that the contractor for Butt Bridge was handicapped by an unfortunate accident in connection with a dam on the north side of the Liffey, and a new schedule was made after this incident which would allow of the bridge's completion in April, 1932. The contractor was now six weeks ahead of this schedule and he (the Port Engineer) had no doubt that, unless something unforeseen happened, the bridge would be opened for traffic in the late Spring of the Eucharistic year.

The matter was raised by the Lord Mayor of Dublin, who said he had been asked to inquire about it in view of some anxiety amongst the public as to whether there would be a footbridge over the River Liffey at Butt Bridge during the week of the Eucharistic Congress.

Galway.

Galway as a Port of Call.

Inquiries in Galway have failed to elicit any confirmation of the report that trans-Atlantic shipping companies are about to abandon the Queenstown (Cobh) calls altogether in favour of Galway. Of the hundred passengers from the White Star liner "Adriatic," which arrived at Galway in the middle of July, 45 had originally booked for Queenstown, and of the 105 which disembarked from the Hamburg-Amerika liner "St. Louis," 15 had originally booked for Queenstown, but decided to land at Galway. The "St. Louis" also embarked eighteen passengers for the Continent.

Galway as an International Air Port.

It is stated that Imperial Airways have been granted by the British Parliament a subsidy of one million pounds over a period of ten years as a grant for the development of civil aviation, and if Galway were to become a regular port of call, or a terminal port for trans-Atlantic liners, Imperial Airways

Irish Harbour Matters—continued.

would be quite capable of handling a passenger and mail service from Galway to any aerodrome in Great Britain or the Continent.



Cranes at Albert Quay, Belfast.

The Director of Civil Aviation in Great Britain now is interesting himself in the subject, and a full report is being prepared for him on the establishment of an international port on the west coast of Ireland. Nearly two years ago, Colonel Charles F. Russell, a former chief of the Free State Air Corps, accompanied by Capt. Somers, of Vickers Vimy Ltd., as pilot, carried mails landed that morning from a North German Lloyd liner at Galway to Croydon aerodrome in the fast time of two hours and fifty-one minutes. A fast service to Galway across the North Atlantic would necessarily be run from a Canadian port such as Halifax or Harbour Grace and would thus make

possible, either by air or overland route from New York with an aerial service at the Galway end, the fastest possible air and sea service from the United States and Canada to Europe.

It is claimed that two millions would build a deep water ocean port at Forbough, Galway. It is pointed out that if the Free State Government used the aerial corps for civil flying, or devised a scheme for civil flying in conjunction with it, it should be possible to establish an Irish air service for civil flying in conjunction with it. The cost of maintaining the present air corps is about £120,000 a year, and £40,000 has been spent on rebuilding an aerodrome at Baldonnell, which is regarded as too far from Dublin to be convenient.

The aerodrome could more suitably be erected at Collinstown, which is nearer the city. It is understood that a scheme has been put before the Government for the development of civil aviation. It would take something like a capital of £100,000 to establish an air service between Dublin and London, and the subsidy required for this would be a maximum of £25,000 a year.

Cork.

Advantages of Cobh (Queenstown).

Mr. M. J. Hennessy discounted the rumours that trans-Atlantic liner companies have decided to abandon their call at Cobh (Queenstown) in favour of Galway.

Trans-Atlantic liners enter the port of Cobh with absolute safety in all tides, day or night, in good or bad weather, and secure immediate clearance. It is not even suggested that the liner companies will in the near future abandon either port. The double call is forced on them by competition, and it is a question of time before the companies realise the futility of such competition and its resultant costs.

Aden Port Trust.

The returns for the month of May, 1931, of shipping using the port, were as follows:—

Merchant Vessels over 200 tons	...	No. 117	Tonnage 480,106
" " under 200 tons	...	8	1,060
Government Vessels	...	3	1,652
Dhows	...	119	3,559
PERIM.			
Merchant Vessels over 200 tons	...	30	97,523

The total value of imports, excluding Government stores was Rs. 43,79,000/- as compared with Rs. 59,06,000/- for May, 1930, and of exports Rs. 30,35,000/-.

The total value of both imports and exports together was Rs. 74,14,000/- as compared with Rs. 98,03,000/- for the corresponding month last year.

Imports during the month were above those for May, 1930, in the case of coffee, gums and resins, seeds, skins (raw), piece goods (grey) and tobacco (manufactured); and below

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	0	0	0	0
Coffee	Cwts.	7,407	2,58,837	7,427	3,30,027
Grain, Pulse and Flour	"	44,072	2,42,837	28,307	1,57,432
Gums and Resins	"	2,939	61,321	2,206	50,015
Hardware	"	0	13,006	0	15,414
Hides, raw	No.	2,486	3,720	5,631	13,620
Oil, Fuel	Tons	29,049	8,71,470	0	0
" Kerosene	Gls.	63,220	46,160	10,720	7,840
" Petrol	"	65,295	71,119	992	1,220
Salt	Tons	0	0	28,100	2,93,000
Seeds	Cwts.	3,576	34,506	304	6,395
Skins, raw	No.	11,505	70,908	13,836	84,846
Sugar	Cwts.	228,348	1,42,788	396,943	2,97,542
Textiles—					
Piece Goods, Grey	Yds.	4,199,820	6,71,572	3,901,095	5,83,472
" " White	"	400,144	90,233	196,900	48,192
" " Printed or Dyed	"	593,543	1,46,918	644,520	1,95,927
Twist and Yarn	Lbs.	134,750	76,125	93,782	55,488
Tobacco, Unmanufactured	"	1,107,232	2,59,685	6,80,736	1,13,544
" Manufactured	"	56,896	63,520	18,816	15,763
Other Articles	No. of Pkges.	45,138	8,84,569	17,342	4,34,826
Treasure, Private	—	0	3,69,690	0	3,30,718
Total	—	—	43,78,984	—	30,35,281

The number of merchant vessels over 200 tons that used the port in May, 1931, was 117 as compared with 124 in the corresponding month last year and the total tonnage was 480,000 as compared with 509,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo the total tonnage of imports in the month was 8,200 and of exports 5,100 as compared with 9,500 and 5,300 respectively for the corresponding month last year.

in the case of grain, pulse and flour, hardware, hides (raw), sugar, piece goods (white), piece goods (printed or dyed), twist and yarn, tobacco (unmanufactured) and treasure (private).

Exports were above those for May, 1930, in the case of grain, pulse and flour, hardware, skins (raw), piece goods (grey), and piece goods (printed or dyed); and below in the case of coffee, gums and resins, hides (raw), seeds, sugar, piece goods (white), twist and yarn, tobacco (unmanufactured and manufactured) and treasure (private).

The Port of Amsterdam

By L. BOOGERD, Director of the Seaport and Airport at Amsterdam; and JHR. J. E. VAN HEEMSKERCK VAN BEEST, Chief Engineer, Chief of the Docks Division of the Public Works Department of the Corporation of Amsterdam

(Continued from page 313)



Fig. 12.

The piles handled in this manner are previously fitted with reinforced concrete caps, which form the transition between the wooden foundation remaining under water and the upper concrete construction above water level (see Fig. 12).

The reinforcing of the caps consists of a spiral and 8 vertical rods, which project above the cap in order to form a firm connection with the reinforced concrete wall floor of 30 centimetres in thickness resting upon the caps. The pile caps are coupled in one direction by wooden girders, resting upon a cheek cast on the cap, and fastened together by bolts and coupling rods.

At right angles to the above-mentioned direction, the girders are fixed to a wooden floor, so that movement of the caps is out of the question.

The pile pegs are then, with the aid of three wooden wedges, clamped firmly between the inside surfaces of the cap after which the space between the cap and peg is filled with concrete mortar. After the mortar has become sufficiently hardened, the wedges are drawn out and open spaces are filled with concrete mortar.

Then follows the placing of the floor reinforcement and the pouring in of the concrete for the floor. When the floor has become sufficiently hard, the caisson for the actual quay wall is placed and filled with rammed concrete.

In the eastern section of the docks area, fenders are always erected in front of the quay walls to serve for the mooring of ships and also for the protection of the wall. These fenders are always erected in front of the quay walls at some distance from the wall, thus saving the walls from the towing force of the ship's hawsers.

Though during the past ten years these installations have been made of a heavier construction, it has been recently proved that they do not yet offer satisfactory mooring accommodation for large passenger ships. Serious damage has repeatedly occurred, so that with the construction of quay walls in the Coenhaven, the braking installations have been omitted and in their stead, mooring accommodation is offered at the

bollards. These bollards, fixed at a distance of about 25 metres from each other, consist of bundles of heavy reinforcing rods anchored at a spot where the wall has been strengthened.

A cast-iron cap, filled with cement mortar, is placed around the bundle of posts. On the quay wall (illustrated in Fig. 11), the bollard construction was given a somewhat different shape from those in the Coen Dock, as it was considered necessary for the tow or pull of the ships to be reduced.

The quay wall floor also forms part of the foundation of the warehouses, so that the danger was not imaginary that excessive towing force, vibration and disturbances in the wall construction might give rise to cracks in the building.

The bollard therefore consists of a lower plate anchored in the quay wall upon which the actual top is fixed with five bolts. The diameter of the bolts is such that when a greater pull than 75 tons is put on them, the bolts snap and the head of the bollard is drawn into the water.

The Construction of Quay Sheds in the Amsterdam Port Area

Although the Port of Amsterdam, especially during the last few years, has been able to attract more and more transit traffic, it owes its great importance in the first place to its excellent accommodation for the storing of goods.

Ever since the days of the East India Company and of the West India Company, Amsterdam has been the staple port for the wealthy produce of the colonies which was shipped to Holland, and Amsterdam was for centuries the market where Europe obtained its requirements of coffee, tea, tobacco and spices.

The character of a harbour for general cargo (piece goods) entails that shipping must have quay space at its disposal alongside deep water and provided with sheds which, in view of the perishable and easily-damaged goods which have to be stored there, have to comply with very high requirements.

These sheds, mainly utilized for sorting merchandise which is stowed pell-mell in the hold of the ship in order that the

The Port of Amsterdam—continued

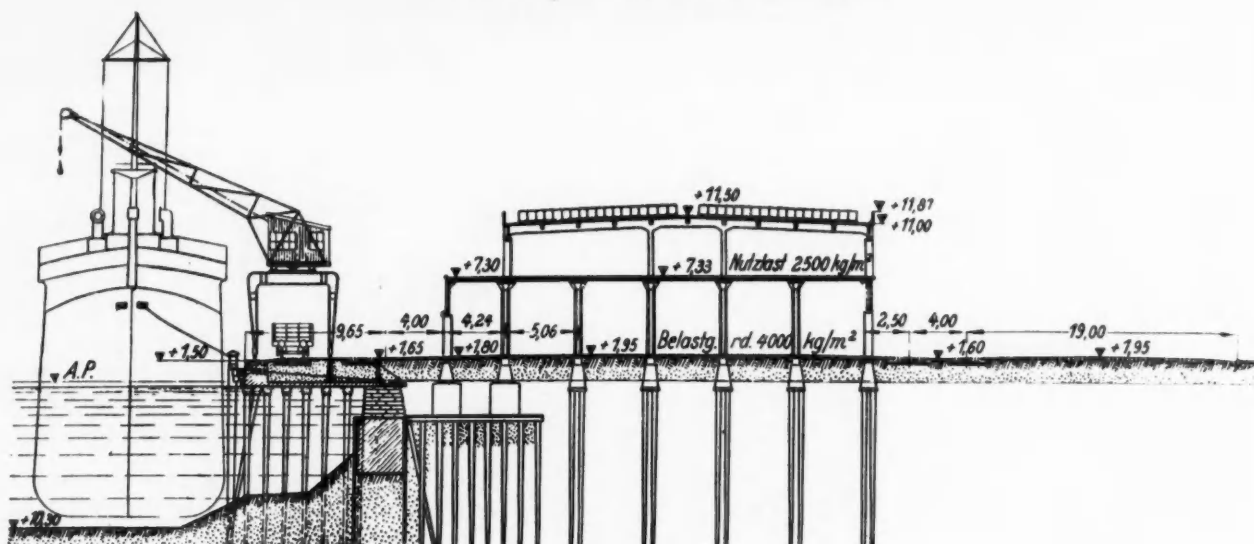


Fig. 13.

various consignees may call for their goods and despatch them by rail, by road or by water, were primarily built in quite a simple manner. After the war, however, both the shipping companies and the municipality commenced building them with one or more floors above the ground floor.

Owing to the increase in the tonnage of the ocean-going vessels and in length, breadth and depth, the floor space required for discharging a ship's cargo has constantly increased. It was not always possible to increase the width or depth of the shed space when putting up new sheds, because these were mostly erected on port land, where the dimensions had been more or less fixed by sheds which had been previously built, or owing to the railway sidings having been laid down alongside them.

In recent years the construction of sheds with one or more floors has been abandoned because the constantly growing competition between the various ports of Northern Europe has compelled the shipping companies to take steps to reduce storage charges as much as possible. Where formerly the bulk of the ship's (general) cargo was discharged into the shed to be re-despatched from there, the tendency is now to store the cargo in the ship's hold in such a manner that it is possible to discharge the greater part of the general merchandise immediately into lighters and other vessels for inland transport, so that according to this method the shed space required is considerably less.

This is the principle reason why of recent years the quay sheds put up by the municipality have again one floor only, i.e., the ground floor.

A short description is given below of the sheds with a single floor over and above the ground floor, built by the municipality on the Commercial and Borneo Quays and also of those recently erected in the Coen Dock.

The first shed with one extra floor was built by the Corporation for the Royal Dutch Lloyd (see Figs. 13 and 14) and formed part of a set of buildings built for this company. The entire complex of buildings comprising offices, warehouses, store rooms and cellars, was constructed in reinforced concrete (Fig. 15).

The shed itself has a length of about 145 metres, on the ground floor a width of 30 metres and on the first floor of 26 metres. The height of the shed space on the ground floor is 5 metres, a height which was considered necessary in order to be able to store a sufficient quantity of goods and at the same time to have enough light in the shed, which is essential for the drawing of samples and for judging the quality of the goods.

The height of the storage space on the first floor is reduced to 4 metres, in the first place because by fitting it with windows in the roof excellent lighting of the shed was obtained, and secondly because the permissible load, which on the ground

floor is 4,000 kilogrammes per square metre, for the first floor had been reduced to 2,500 kilogrammes per square metre.

In order, in case of sudden fire, to limit its extent as much as possible, the shed or warehouse is divided into two parts by a system of fire doors. The fire doors, which are 2.50 metres in width, consist of a wooden frame covered with galvanised sheet iron. They are constructed as sliding doors and are suspended from rails in such a way that, in case of fire, they will close automatically by their own weight (after a chain, with links of easily fused metal, has melted).

On the ground floor, the long side of the shed opening on to the water front consists entirely of doors. The doors are sliding doors which are suspended from ball-bearing rollers which are made to slide on rails fixed above the door openings.

On the land side of the ground floor, as also on both the water and land side on the first floor, the sliding doors are placed at intervals of 5 metres.

The ground floor consists of a slab of reinforced concrete of a thickness of 12 cm. which rests immediately on the ground, and which is entirely kept free from contact with the pillars of the shed.

The application of such a simple floor construction was possible in this instance because the ground had for many years previously been exposed to heavy loads. The concrete floor, in order to protect it against the wear and tear caused by the trolleys and trucks, is covered with a xylolite floor.

The first floor is of the mushroom type. These beamless floors ensure the deep penetration into the shed of light, and from a hygienic point of view present considerable advantages, as they are more easy to clean.

A comparison from an economic standpoint of the flat plate floor or ceiling with a beam floor was also in favour of the "flat plate" floor.

The saving in casing timber for the concrete is 10 to 20 per cent. and in carpenter's wages about 20 per cent., as the making of casing for the beams and the supports of the beams is unnecessary. Although the quantity of concrete used for the flat plate floor is about the same as that required for a beam floor, and although the quantity of concrete steel in the case of the "flat plate" floor is even 10 per cent. more, the application of this system of flooring results in a considerable saving.

In this country the application of this type of floor has been restricted to a few instances only. So far, there are no definite regulations regarding such construction, so that for the purposes of calculation the experience gained in foreign countries, especially in America, has been utilized. As far back as in 1914 the building officers of Chicago began to impose regulations for the calculation of "flat plate" floors—regulations which were based on observations made in practice

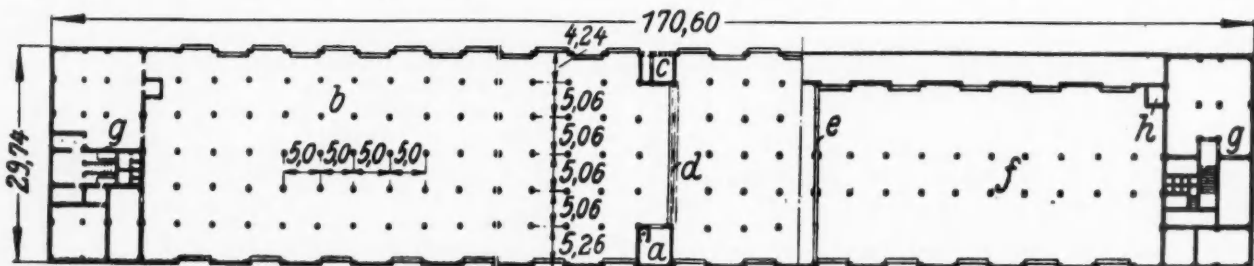


Fig. 14.

The Port of Amsterdam—continued

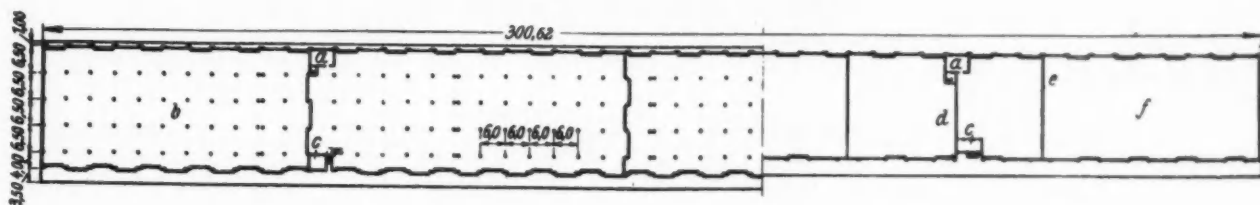


Fig. 17.

with the aid of strain measurements. The regulations of the City of Chicago were revised in 1918, and meanwhile other American towns such as Pittsburgh, Cleveland, Detroit, Philadelphia and others have since also drawn up regulations.

The rules of the Chicago municipality were found to be unnecessarily strict for the conditions prevailing here, particularly as the work is generally carried out carefully and with judgment. Furthermore, the rules are fairly rigid and leave little latitude and, moreover, the absence of a direct connection between the thickness of the columns and the moments of the floor was felt to be a drawback.

As the regulations of the City of Pittsburgh, dating from 1916, are more elastic and lead to measurements which have to a greater extent been confirmed by tests, the calculation of the "flat plate" floor was carried out in accordance with these rules.



Fig. 15.

The calculations were based on a load of 2,500 kilogrammes per sq. metre. The floor width is divided into 5 spaces of 5.00 metres and a platform space of 4.00 square metres, whereas lengthways the pillars have been so placed that 29 spaces of 5 metres each are obtained.

The floor is supported by pillars having an octagonal cross-section with a diameter of 45 centimetres. The pillars 5.20 metres in height and constructed as encircled pillars consisting of concrete, have at the top a widening pillar-head at an angle of 40 degrees with the vertical, also octangular, which passes into the floor and then has an inscribed-circle-diameter of 1.10 metres.

The pillars in the front of the building, which for aesthetic reasons are not encircled but ordinary, have only half column-heads.

Along the outside of the outer fields, as also round those fields which are intersected by stairholes, reinforced concrete beams of 30 x 60 centimetres have been placed. The reinforcing of the floor itself has been effected according to the four-directions-system, with bundles of 16 rods of 12 millimetres diameter, both for the straight and the diagonal bundles. In order to be able to absorb the negative moment of the column-head, out of every bundle, at a distance of 0.24 L. (L = the average span between the centre lines of the columns) from the centre line of the column, 8 rods have been bent upward, and 13 rods of 12 millimetres have been added to each bundle. The reinforcing of the outer fields is entirely similar to that of the ordinary fields—only the rods are of 14 millimetres diameter instead of 12 millimetres. The rigidity at the column head has again been increased by bending the column rods into the floor and joining them together with rings of round iron.

The thickness of the concrete floor is 24 centimetres and, with the most unfavourable load, a maximum concrete-strain sets in of 33.5 kilogrammes per sq. centimetre and a maximum iron-strain of 1,175 kilogrammes per sq. centimetre.

The mixing proportion of the concrete was 1 part cement, 2 parts sand and 3 parts gravel. Per sq. metre of floor 25.6 kilogrammes reinforcing iron has been applied.

The roof construction, which has been entirely executed in concrete, consists of main-girders, 0.30 x 0.60 metres, placed at 5 metres distance from each other, resting at the ends on the lengthwise walls and, at a distance of 2.50 metres from the centre, on 2 columns, 0.30 x 0.30 metres. The main-girders are joined together by bridging joists, 0.15 x 0.30 metres, occurring at distances of 2.53 m. between the centre lines, (Fig. 16).

Over the main-girders and the bridging joists, the roof-plate, 8 centimetres thick, has been laid, with a gradient from the centre to the lengthwise walls of 0.04 metres per metre.

For lighting the shed, roof lights have been fitted at distances of 10 metres between the centre lines, each of about 10 metres long and 2.50 metres wide.

The glass-pane rods are made of double angle-iron, whereon, in soft putty, panes of wired rolled glass have been placed, which have been covered over with oak laths in such a way as to make the construction completely burglar-proof.

On the Borneo Quay the Municipality of Amsterdam during 1922 and 1923 built two one-storey sheds for the Ocean Steamship Company, of which the smallest, intended for outgoing cargo, had a length of 165 and a width of 30 metres and the largest (Fig. 17), intended for incoming cargo, a length of 300 and a width of 30 metres.

As appears from the cross-section, the principal measurements of this shed are about the same as of the one on the Commercial Quay (Fig. 18).

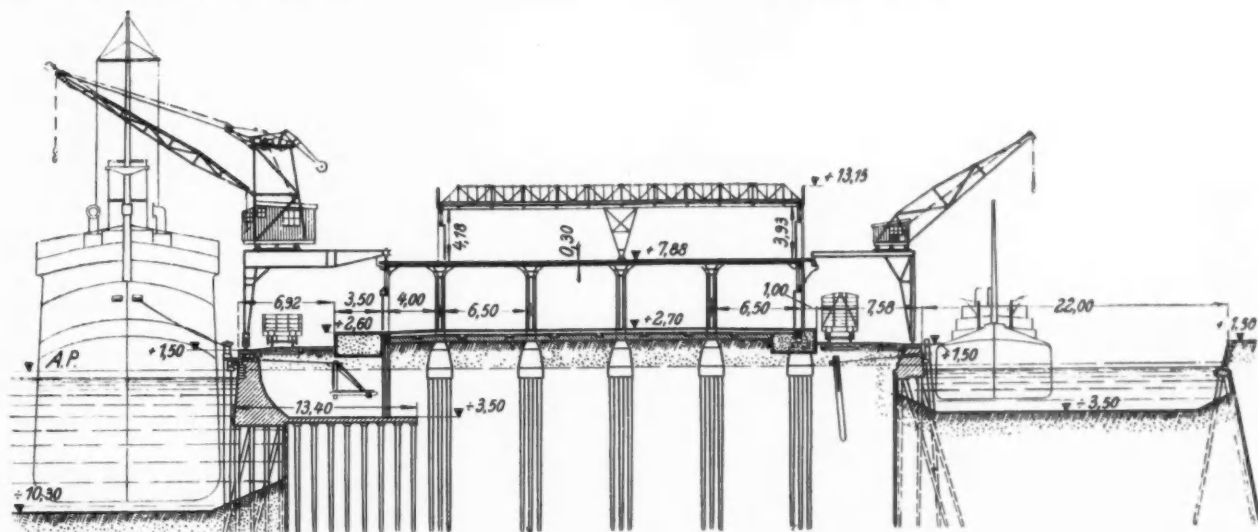


Fig. 18.

The Port of Amsterdam

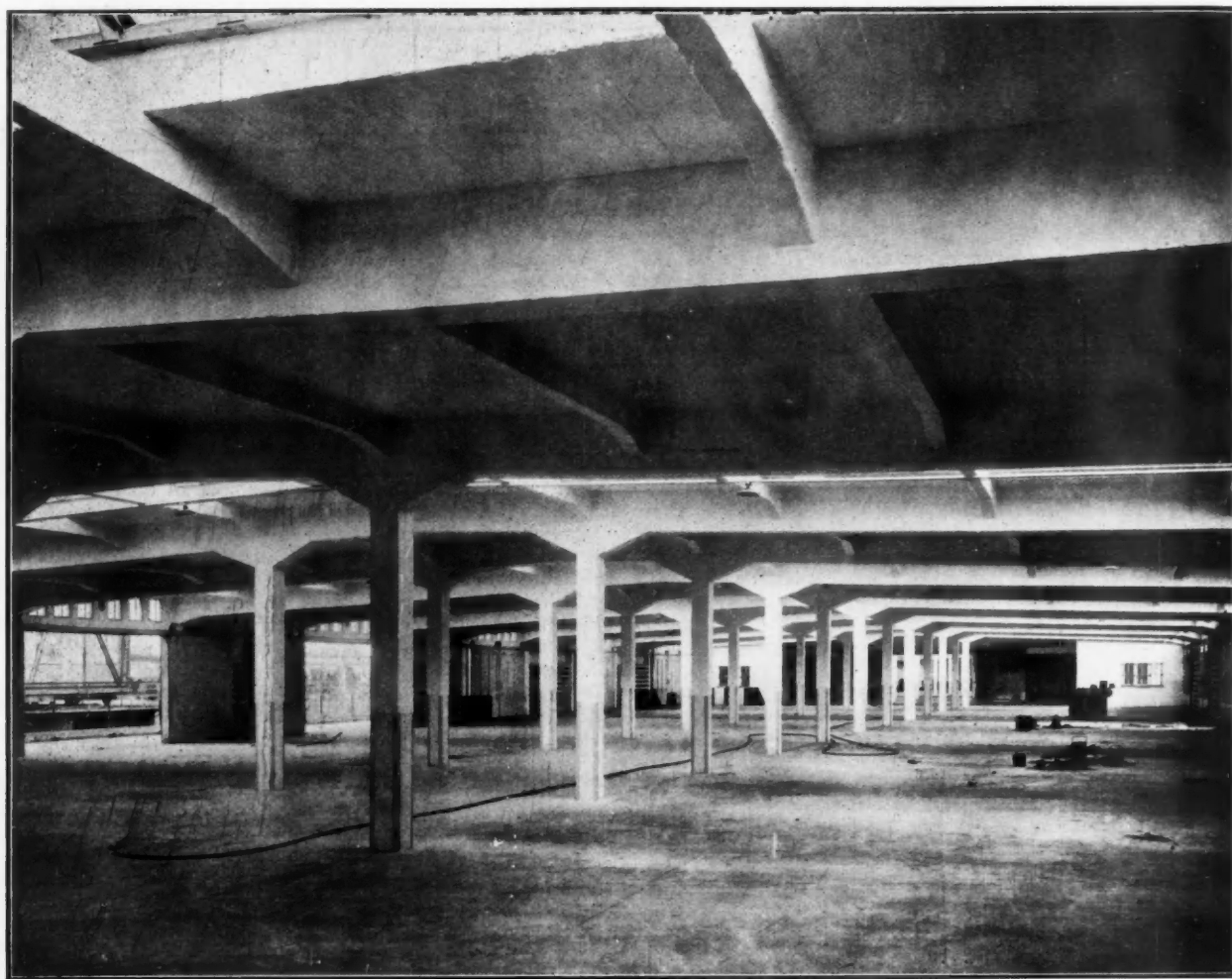


Fig. 16.



Fig. 20.

The Port of Amsterdam—continued

In contrast with the shed on the Commercial Quay, these sheds are provided with raised platforms, because the Steamship Company in question attached great value to the floors of their sheds being as clean as possible, on account of the very valuable and easily-damaged goods which are received by them from the Dutch East Indies.

The platform consists of a square basin of reinforced concrete, filled with sand, having a width at bottom of 3.20 metres, by 1.60 metres height and divided into compartments by side-partitions placed every 2 metres. These sand basins have also to sustain the side-pressure arising when the ground floor of the shed carries a load.

As the ground on which the sheds were built was obtained by raising it with dunesand, and it was feared that the surface line would still subside considerably, it was decided to fit a wooden floor on the ground floor of the shed, as such a floor, in case of serious subsiding, could again be raised to the required level. To divide the load as equally as possible on the ground underneath, a foundation of coarse broken stone of a thickness of 30 centimetres was rolled in before laying the wooden floor. On this coarse layer of stone, a layer of broken lime of 10 centimetres has been rolled in and, on top of this,



Fig. 19.

a flat layer of masonry has been laid. In this layer 5 ventilation channels have been left which are connected with the outside air by gratings placed in the end gables, in order to prevent the floor-wood from decaying. The floor sleepers are of creosoted pine, 0.10 x 0.20, and are laid at intervals of 0.75 metres across the shed and on these the floor planks of tropical hardwood are fixed. The flooring boards are of a thickness of 0.05 metres by a width of 0.15 metres.

The useful load allowed on this floor is 4,000 kilogrammes per sq. metre. For the floor of the first floor, the mushroom system has also been selected (Figs. 19 and 20).

While the plans for these sheds were being prepared and the calculations made, the regulations of the American Concrete Institute were published which leave the constructor on the whole more freedom to apply the results of his experience and his own views of construction, and which take the weight of the pillars, of possible additional loads to the plates and the size of the column-heads more into account. As the elasticity of these regulations was a great attraction and furthermore there was the conviction that a sound construction would be obtained, the floors were calculated in accordance with the regulations of the A.C.I. In the direction of the width of the shed, the fields are 6.50 metres long and in the direction of the length of the shed, 6 metres. The pillars again have an octagonal cross-section, but, owing to the load being greater as a result of the increase in size of the fields, the inscribed diameter is 0.60 metres, whereas the pillar head has a diameter of 1.70 metres.

The thickness of the concrete floor is 30 centimetres and in case of the most unfavourable load, a maximum concrete-strain occurs of 25 kilogrammes per sq. metre and a maximum iron-strain of 1,200 kilogrammes per sq. metre.

The reinforcing of the floor was effected, for the short straight bundles with 23 rods of 13 millimetres diameter, for the long straight bundles with 26 rods of 13 millimetres, and for the diagonal bundles with 17 rods of 13 millimetres in diameter.

Two-thirds of the concrete floor has been covered with a xylolite floor.

In deviation from the system applied in the case of the shed on the Commercial Quay, which consists entirely of reinforced concrete, the sheds on the Borneo Quay only have pillars and floors of reinforced concrete, the walls being filled in with brickwork and the roof being of iron framework (Fig. 21).

This iron roof construction consists mainly of joists placed at intervals of 12 metres and coupled by roof girders at the distance from each other of 2.30 metres between the centre lines.

Above every joist, a skylight has been placed, whereby very good lighting of the upper storey of the shed is obtained. The roof itself consists of concrete casket plates covered with ruberoid.

This iron construction costs about 25 per cent. less than the concrete roofing on the shed on the Commercial Quay and has the additional advantage, that, while the shed was being built, the roofing could be made at the construction workshop.

Figs. 22 and 23 illustrate the shed completed during the previous year in the Coen Dock. A second shed of about the same measurements and construction is at present being erected on the first jetty.

The shed is 120 metres long, 30.30 metres wide and about 7 metres high.

The roof construction is made of iron, the walls consisting of columns of reinforced concrete with a filling of brickwork. Only the feet of the columns, the walls and the platforms of the shed have foundations, whereas the floor, consisting of a reinforced concrete slab 0.12 metres thick, covered with an asphalt floor, rests directly on the raised layer of sand which has been laid under the shed.

In order to ensure good lighting in the shed skylights have been inserted above the joists.

The distance between the joists is 10 metres; the purlins, at a height of 0.45 metres, are placed at a distance of 1.65 metres between the centre lines. The roof itself consists of pumice stone light-weight concrete slabs covered with Rex.

Plans for Extension.

The rapid increase of shipping at the Port of Amsterdam and the constant demand for quays and wharves on which to provide new open-air storage, or to extend those already existing, has as far back as the year 1913 led to plans for the future extension of spaces available for shipping in the harbour. As it was to be expected that at the rate of development shown during the last 25 years the last available space on quays or wharves in the eastern portion of the harbour would soon have been leased, eyes were cast to the western outskirts of the town as already mentioned in this article.

At first many objections were made, especially in shipping and commercial circles, to this extension project, because it was felt that the great advantages which the Port of Amsterdam offered by reason of its convenient and cheap water accommodation would be lost if new cargo storage were constructed in the western portion of the harbour, which naturally is at a great distance from that already existing. Gradually, however, the shipping and trading firms became convinced that the interests of the harbour would be best served by carrying out the extensions in the western part of the port where good building land was available and where the big liners could reach their berths without having to pass the town front.

The plans for the extension above-mentioned comprise three separate projects, viz., the large West Dock, the new Timber Dock and the Coen Dock. The Coen Dock was commenced during the war and the execution of this project was possible because the municipality had sufficient building land at its disposal in that district. A second reason was that the preliminary work for the Coen Dock, which would benefit the port as a whole, was the smallest in extent.

In dividing up the Coen Dock, the principle adopted was that for a rapid and continuous loading and discharge it would be most advantageous if the commercial site is bounded on the one side by a quay with deep water for berthing ships, then immediately along the edge of the quay a line of cranes, then a railway siding for arrival and despatch laid down in a paved road, then the warehouse space and then on the other side, a quay or wharf where the goods can be loaded into inland vessels from the sheds or can discharge into them.

This new system of dividing up the quay was put into practice for the first time in the eastern part of the Borneo Quay (see Fig. 19) for, as will be seen in Fig. 13, the commercial establishments on the Commercial Quay and the Y Island have only water on one side. Seeing that experience had shown that with the present division or arrangement of the island the small inland vessels have repeatedly met with difficulty due to the position of the ocean-going vessels and that these inland vessels, even when discharging, have had to change their berths several times, then this new system, by which both sea-going and inland vessels can carry on their work of loading and discharging independently and without interruption, may be considered a very great improvement.

In order to be able to apply this system in the Coen Dock, two large jetties or piers have been built in the first portion of the dock, with a water area of about 50 acres in extent and were completed in 1925, each with a length of 300 metres and

The Port of Amsterdam

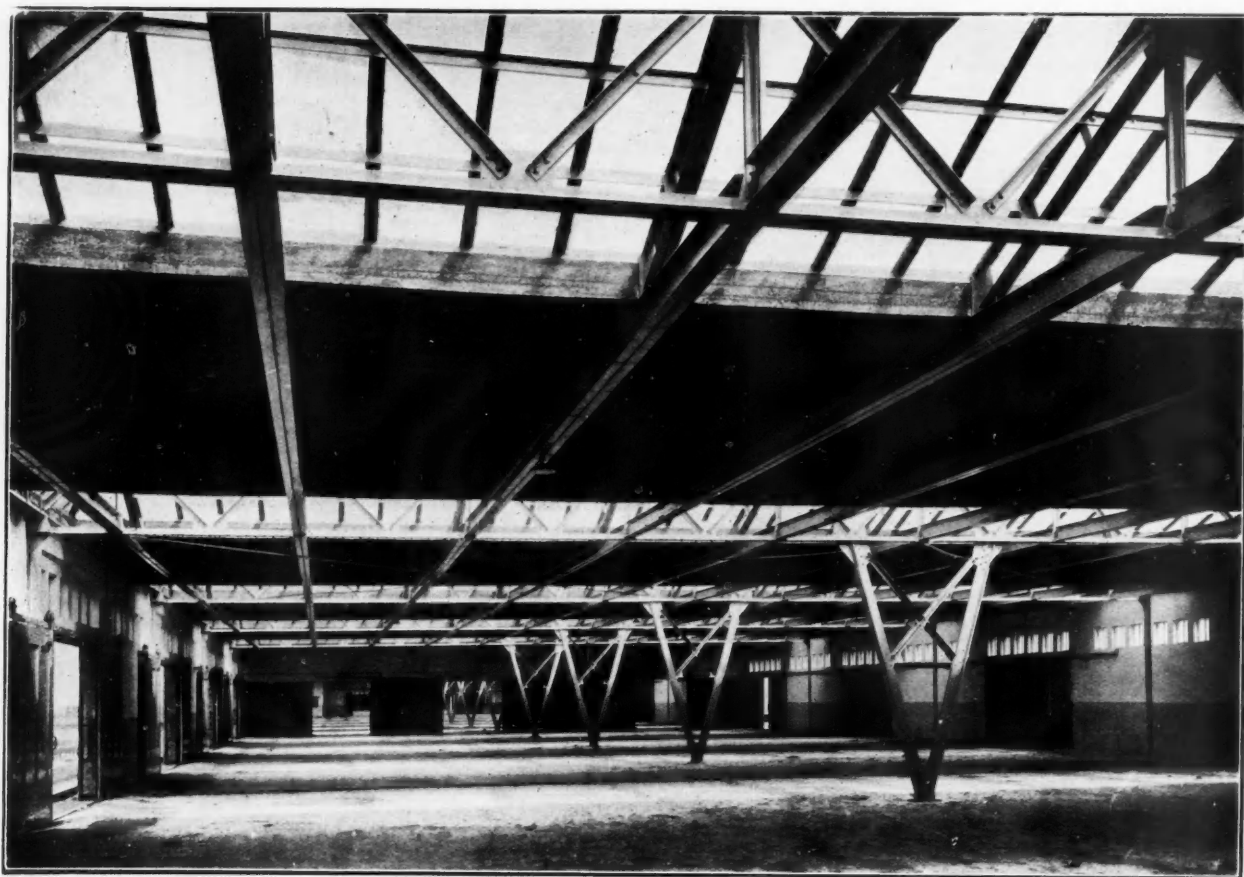


Fig. 21.



Fig. 22.

The Port of Amsterdam—continued

55 metres in width, with deep water on one side (10.80 metres below Amsterdam level) for ocean-going vessels and on the other side water sufficiently deep for inland vessels, (viz., 4.50 metres below A.L.), see Fig. 9. The second part of the Coen Dock, now in course of construction will, besides two further jetties, comprise of a quay wall for seagoing vessels on the east side of the dock.



Fig. 23.

Owing to the change in the method of transferring goods which has come about during the last few years, a different arrangement has been made from that described above on the west jetty or pier. As already stated, in the eastern part of the harbour the sheds have deep water on one side only, so that a disproportion has come about between the available shed space and the quay space in front of the sheds, owing to the fact that, far more than was hitherto the case, goods are being transferred directly from the ocean steamer into the in-

land vessels without making use of the sheds. To this must be added the fact that the average tonnage of the ocean vessels has increased and that a number of these ships have, in proportion to their size, but little cargo to discharge or to load, but still require a considerable length of quay, if only for a short time.

In order to meet this difficulty the third jetty in the Coen Dock is being built in such a way that ocean vessels will be able to berth on either side, while to provide berths for inland vessels, which bring cargo to be transhipped into ocean-going vessels or have to receive cargo from these, an inner dock has been planned of 26 metres wide and a depth of 3.50 metres below Amsterdam level, situate between the sheds to be built on that jetty and the west boundary.

Further, the jetties in the second portion of the Coen Dock will be made much longer than those in the first part in order to permit two large steamers of great length (150-160 metres) to occupy berths on either side.

The further extension of this set of docks and basins will be carried out from the Amsterdam Polder in the direction of the town and will in time necessitate the removal of the entire Timber Dock now existing.

The new Timber Dock will, as projected, have an entrance for ocean-going vessels between the Petroleum Dock and the Hem Bridge and will occupy a space of about 750 acres and will therefore cover twice the area of the present Timber Dock.

The large West Dock will be accessible to ocean-going vessels entering from the North Sea Canal west of the Hem Bridge, so that the ships will be able to reach their berths without passing the latter. Along the south side of this dock jetties have been projected which will be available either solely for ocean steamers or both for ocean and inland shipping, in about the same proportion as in the Coen Dock, while the north side of the dock will be reserved for the establishment of factories. Both the West Dock and the Coen Dock will be provided with railway sidings connected with the new circular railway goods line being constructed round the city, and with separate connecting canals for inland shipping, through which the town canals can be reached through the Wester Canal and the eastern port territory through the River Y.

*Scottish Harbour Notes**The Port of Leith and its World-wide Trade.*

AN interesting article concerning the Port of Leith appeared in a recent issue of the "Edinburgh Weekly Scotsman" in which it was stated that in the course of a single year over twelve hundred vessels arrived at this port bringing cargo of between 800,000,000 and 900,000,000 tons and carrying away a still greater weight of merchandise. "Leith Harbour," proceeds this article, "has a great fascination for the ordinary intelligent sight-seer watching the loading and unloading going on. Here are goods coming or going to such countries as the East Indies, China, Russia, Holland, Germany, Roumania, Turkey, Latvia, Esthonia, Finland and numerous others. Twenty-eight different centres have been known to deal with Leith, and there may still be others to come. What is more—the coastal trade of Leith extends from Newcastle-on-Tyne in the south to the Orkneys and Shetlands in the north. It is curious to think that a ship just leaving the port may be bound for the other end of the earth, while the one that follows on her heels is a pleasure one taking tourists to Abendour and Kirkcaldy."

Controversy Concerning Dredging of Dodd's Bank, Bo'ness.

On the subject of dredging the Dodd's Bank at the entrance to Bo'ness Harbour and Dock, the Clerk to the Forth Conservancy Board has replied to the Bo'ness Town Council that the former were advised that the portion of the bank referred to was within the area of the London and North-Eastern Railway Company (owners of the dock). As the matter was purely a question of fact he had been instructed to write to the Marine Superintendent of the Railway Company as to the position, after which he would again communicate with the Town Clerk. The question of dredging the bank had arisen out of the proposal to extend the harbour as, unless and until the fairway is deepened, a larger type of vessel cannot be attracted to the port, and the proposed extension scheme is bound to be held up. Provost Simpson (the town's representative on the Conservancy Board) was instructed to press the subject before the notice of the Board.

Stornoway Harbour Works and Government Grant.

A memorial has been addressed to the Treasury by the Stornoway Pier and Harbour Commission making a request for a grant of £40,500 towards the second instalment of the harbour works scheme, which provides for the deepening of the remainder of the inner harbour north of the portion now being deepened under the first instalment; the relative works along Cromwell Street Quay; and the reconstruction of No. 1 Wharf. It is pointed out that Stornoway Harbour has never since its inception received any grant from a Government department, whereas grants and cancellations of debt have been allowed to other ports in the north of Scotland. During the war the Navy took possession of Stornoway Harbour without compensation or harbour dues being paid by the Admiralty.

Stornoway Harbour Commissioners further reminded the Treasury that in the year 1928 it was decided that the proposed harbour works should be carried out in instalments; the first being provided for by application for a loan to the Public Works Loans Board on the understanding that the Development Commissioners would be prepared at a later date to consider the possibility of recommending an advance towards the cost of the later portion of the works. The Stornoway authorities declare that the full benefits from the first instalment of the scheme cannot be obtained until the second instalment is completed.

Proposed Improvements at Portsoy Harbour.

At a recently-held meeting of the Portsoy Town Council an important communication was submitted from the Fishery Board for Scotland concerning the proposed improvement of the local harbour and also referring to the visit of the Board's Harbours Committee to Portsoy in the month of May last. It was intimated that the Board had given very careful consideration to the requirements of the harbour and had come to the conclusion that the cost of the works necessary to make it really suitable for laying up steam drifters would be disproportionate to the interests involved; and, while they fully recognised the disabilities under which the fishermen laboured, they did not feel justified in recommending assistance for any extensive

Scottish Harbour Notes—continued.



The London and North-Eastern Railway Company's Docks, Burntisland.

scheme. It appeared to the Board that the shortening of Tom's Jetty (which lies to the west of the entrance to the new harbour) would probably result in reducing the motion in that harbour, and on this subject the Board's consulting engineer had made a special report.

This report by the Board's consulting engineer indicated that he had considered this proposal to shorten Tom's Jetty, and he was of the opinion that the removal of a portion of this jetty, fifty-five feet in length, would make the harbour basin much easier of access and quieter during stormy weather. The jetty consists of solid rock with a concrete superstructure, and it would be necessary to face up the end of the jetty with concrete after the outer portion has been removed. The estimated cost of this work was £850, and the Board (in their communication) expressed themselves prepared to make a grant from their funds of £637 or three-fourths of the cost (whichever is less) on condition that the work is carried out to the satisfaction of the Board and under such supervision as they consider necessary. The Board further asked the Portsoy Town Council whether they were prepared to accept this offer so that—if so—the Board engineering staff might prepare a specification for the work. It was unanimously agreed that a special meeting of the Town Council should be held to consider the whole subject at issue.

Extensions of Harbours in the Orkney Islands.

A visit was recently paid by the Secretary of State for Scotland (Mr. William Adamson, M.P.) to the Orkney Islands in connection with the proposals for the extension of harbours in that vicinity. On landing at Kirkwall Mr. Adamson had a lengthy conference with the Chairman of Orkney Harbour Board (Provost Slater) when the harbour particularly dealt with was that of Whitehall at Stronsay. It was explained to Mr. Adamson that this undertaking would not warrant the Commissioners themselves financing a loan of £30,000 for the proposed extensions and improvements as had been suggested by the Fishery Board, and Mr. Adamson appeared to look with favour upon the arguments submitted to him for a grant; remarking that nowhere had he found the demand so moderate nor a county which had itself financed so many of its undertakings. Following upon the conference, Mr. Adamson indicated that the points put forward would be taken into careful consideration and that the Government's decision would be announced in due course.

Anstruther Union Harbour Improvement Works to Commence.

In connection with the new scheme of alterations and improvements at Anstruther Union Harbour, Fifeshire, and also for the repair of the sea walls, the local Harbour Commissioners have now accepted the offer from Mr. Robert Terras, Junior, East Wemyss, out of five tenders submitted. The offer by the successful tenderer amounted to £15,903, and it is intended to

proceed with this scheme as quickly as possible. The alterations at this harbour have been rendered necessary by way of giving better accommodation for the landing of fish locally, and it is felt that the improvements will prove of considerable benefit. The consulting engineers for the scheme in question is the well-known firm of Messrs. D. and C. Stevenson, of Edinburgh.

New Tender for Plymouth Ocean Liner Service**The "Sir Richard Grenville" delivered for Service to the Great Western Railway Company**

After successful trials recently, delivery was taken at Plymouth on Monday the 20th July, of the ss. "Sir Richard Grenville," the Great Western Railway Company's latest addition to their fleet of tenders, which will take her place in the tender service carrying passengers, baggage and mails between the liners calling in Plymouth Sound and the Company's ocean passenger landing pier at the Millbay Docks. As is generally known, all the biggest ocean liners now make Plymouth a port of call. Owing to Plymouth being the most western port of Britain, passengers from overseas save a day by disembarking at Plymouth and taking train to London or other parts of the country.

The vessel is built to Lloyd's Special Survey, and to comply with the latest Board of Trade requirements for a passenger-carrying tender.

The principal dimensions are: Length, 170-ft.; moulded breadth, 42-ft. 6-in.; moulded depth, 15-ft. 9-in.; with a mean draft of 11-ft. 9-in.

With an indicated horse power of 1,700, she will have a good turn of speed. The new tender is also intended to assist with the popular excursions to the various delightful spots around Plymouth during the summer months.

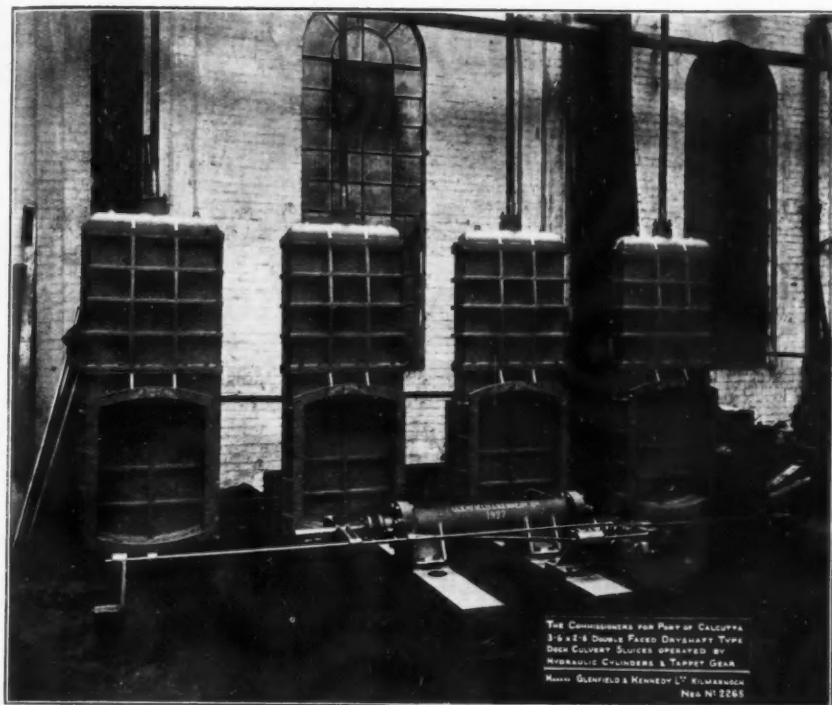
The new vessel possesses great stability, the promenade deck being left as clear as possible for the stowage of mails and motor cars. On the main deck a saloon deckhouse, running the full length of the vessel, is being fitted out with a smoke room complete with bar, ladies' lounge and a large roomy after-cabin, which will form a general lounge. There is also a dining saloon fitted out, which will be particularly useful on the excursions.

The carrying capacity of the vessel will be 800 passengers. She is a twin-screw vessel, which gives her ample manoeuvring powers for attending on the liners.

Careful consideration has been given to fitting out the interior of the vessel, so as to give every comfort and warmth to the passengers from the liners, especially in winter time, and, generally, the "Sir Richard Grenville" is an improved edition of her sister vessel, the "Sir John Hawkins," built last year.

The Graving Dock at Southampton

An Important Valve Contract



3-ft. 6-in. by 2-ft. 6-in. Double-faced Dryshaft-type Dock Culvert Sluices.

WITH regard to the new Cunarder and the Graving Dock to accommodate this vessel, now under construction for the Southern Railway Co., Ltd., at Southampton, which will be the largest in the world, the contract for the whole of the water control equipment has been placed with Glenfield and Kennedy, Ltd., of Kilmarnock. Full information has, of course, not yet been made available concerning the vessel, now being constructed by John Brown and Co., Ltd., Clydebank, but the length is stated to be 1068-ft., with 73,000 tons displacement, having water tube boilers and turbines capable of developing 200,000 S.H.P., more than twice that of any ship afloat, to attain a normal speed of 30 knots, and 32 knots on the measured mile. There are, of course, only two ports in the world capable of docking such a gigantic vessel, Southampton and New York, and the construction of this Graving Dock had to be arranged

definitely before work could commence at Clydebank. It is expected also that the vessel will be ready for dry docking in the autumn of 1933. The water control equipment, to be supplied, delivered and erected by Glenfield and Kennedy, Ltd., includes eleven 10-ft. diameter electrically operated sluice valves, the largest of this type ever manufactured, and six 6-ft. 6-in. valves of a similar type. Also there are four 54-in. electrically operated and automatic self-closing sluice valves for main pump discharge, four 60-in. electrically operated sluice valves for main pump suction, and four 36-in. electrically operated sluice valves for storm water control.

In addition a number of hand operated sluice valves for drainer pump discharge are included, along with special Tilting Disc Reflux Valves for the drainer pumps and double air valves for releasing accumulations of air beneath water-tight decks.

Further details concerning this important contract cannot yet be obtained, but the latest principles of "distance" electrical control are being adopted for these various valves along with remote indicating equipment, such as already supplied by Glenfield and Kennedy, Ltd., to many important Docks throughout the world.

Some recent examples during the past 2-3 years are the East India and Millwall Docks, Tilbury Docks, the Gladstone Dock, Liverpool, and the Kidderpore Dock, Calcutta. In the latter connection, for example, the firm manufactured 22 culvert sluices, each 9-ft. by 6-ft., and 8 sets of dry well sluices, 9-ft. by 6-ft., as well as 4 sets of dry well sluices, each 3-ft. 6-in. by 2-ft. 6-in. The general construction comprises cast iron frames, doors and domes, and bronze valve faces, containing no trace of zinc to prevent electrolytic action due to the sea water. Also each of these sluices is operated by a cast iron hydraulic cylinder and designed for 40-ft. working head being tested before delivery to a pressure of 50 per cent. over this figure.

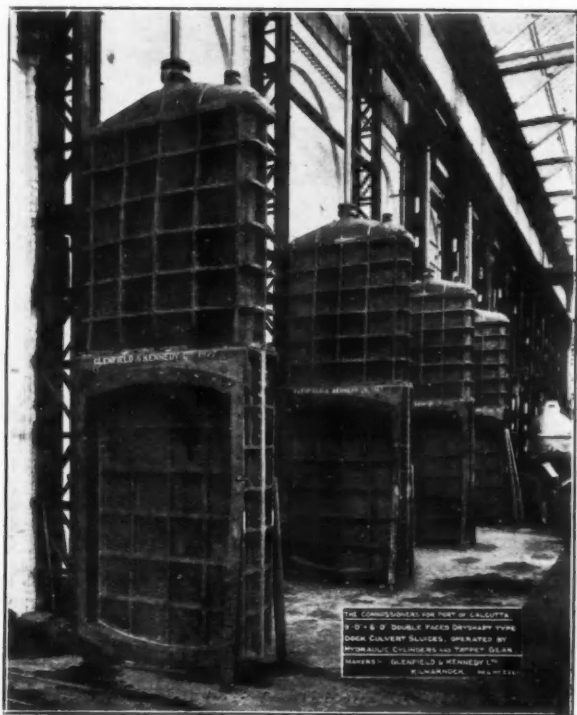
The sluices for Southampton are on similar lines, but of the wet well type, heavier in construction to withstand the higher working pressure, and with also electric instead of hydraulic operation.

Weser River Shipping in June, 1931

The deterioration of shipping conditions on the Weser continued in June. Average draft depth from Hanover-Münden was 1.32 metres, i.e., almost three-quarters of a metre lower than the minimum for full loading. Traffic on the Middle Weser encountered the same difficulties.

Goods traffic through the Bremen Weser Lock amounted to 101,200 tons downstream against 94,100 tons in the previous month and 114,500 tons in June of the previous year, and upstream to 34,200 tons, against 34,300 tons and 32,400 tons respectively. Amongst the more important items in downstream traffic potash and salt rose by 7,400 tons and gravel and stones by 7,700 tons; the latter was due to the recommencement of the transport of chalkstones from Polle for the Norddeutsche Hütte, Bremen, which had ceased since December of the previous year. Coal transport decreased by 1,000 tons. Upstream transport of grain and timber rose by 1,200 tons and 1,800 tons respectively.

During the first half of this year 737,100 tons were transported in both directions against 1,039,200 tons in the same period of 1930. Thus the decrease in traffic amounted to 302,100 tons, equal to 30 per cent. Of this, 258,700 tons fell on downstream traffic in which, among others, gravel and stones decreased by 174,100 tons, equal to 65 per cent., potash and salt by 43,500 tons, equal to 30 per cent., and coal by 35,600 tons equal to 10 per cent. Upstream traffic lost 43,400 tons, grain decreasing by 28,700 tons, equal to 30 per cent., timber by 26,400 tons, equal to 59 per cent., and flour by 3,000 tons, equal to 14 per cent. Only in "other goods," which includes foreign coal, was there an increase by 14,700 tons.



9-ft. by 6-ft. Double-faced Dryshaft-type Dock Culvert Sluices.

Shipping, Engineering and Machinery Exhibition

Some of the Exhibits to be seen at Olympia, London, from September 10th to 26th

BABCOCK AND WILCOX, LTD.

This firm will have two large exhibits, featuring their new type SX Marine Boiler, and also the Bailey Furnace Wall. The Type SX Marine Boiler is a new development combining the rapid steaming and lightweight qualities of the small tube boiler with the advantages of sectional construction and positive circulation, which are the dominant features of the standard Babcock and Wilcox Boiler. This design enables a saving of weight and space which has heretofore not been possible. The Bailey Wall exhibit will be of particular interest owing to its wide adoption throughout the world. An important feature of furnaces embodying this wall construction is very great mechanical strength. The water cooling tubes are reinforced with metal blocks clamped securely to the tubes, the tubes are prevented from spreading and the wall is braced together by horizontal rows of tie clamps mounted on the walls at regular intervals. The complete wall is reinforced by buckstay clamps which are tied in with the boiler columns with provision for expansion. The wall assembly, therefore, is very strong structurally and well able to resist the usual pressure, temperature and load stresses. Bailey Blocks, in addition to strengthening the wall, safeguard the tubes from failure due to flame impingement and automatically ensure maximum furnace temperatures over a very wide range of loads. In addition to the above, Messrs. Babcock and Wilcox, Ltd., will also exhibit a large number of models of boilers typical of modern practice for both central stations and industrial plants. Also a large number of accessories of all kinds will be displayed, as well as photographs of various unique installations.

THE MARCONI INTERNATIONAL MARINE COMMUNICATION CO., LTD.,

will exhibit a very wide range of Marine Wireless Telegraph and Telephone Equipment, and the latest type of Wireless Direction Finder. A part of the stand will be devoted to an exhibition of the Marconi Sounding Device, a recent development to assist navigators by providing them with a visual indication of the exact depth of water under the ship. The wireless exhibits include three completely installed ship's wireless cabins, thus enabling the type of apparatus most suited to any particular type of ship to be examined. One cabin contains a complete wireless telegraph station to meet the requirements of passenger ships, and includes long and short wave Transmitters, with a power of 2 k.w.; Valve Receivers for any wavelength from 15 metres to 20,000 metres; emergency apparatus and the latest type of Marconi Direction Finder with the fixed frame aerial system. Among the installations for smaller ships are $\frac{1}{2}$ k.w. Valve Telegraph Transmitters, 300 watt Quenched Spark Transmitters, and Wireless Telephone Transmitters, each with their appropriate receiving apparatus. Of special interest is a new Telegraph Transmitting Key developed by the Marconi Company, which has proved itself highly efficient and is particularly suitable for handling heavy currents over very long working periods. Its value in assisting telegraphists to provide efficient service is recognised in the fact that the British Post Office authorities have recently ordered these keys to be fitted in all the coastal wireless stations under their control. Recommendations in the International Radio Telegraph Convention of Washington, and also in the Safety of Life at Sea Convention, stated that a continuous watch for distress calls should be maintained on every ship fitted with wireless. In order to comply with this recommendation in ships carrying only one, or perhaps two, operators, where it is not physically possible to maintain a continuous watch, the Marconi Company produced the Auto Alarm, which can be left in circuit when the human watch is terminated, and which will call attention, by means of bells in various parts of the ship, when a distress call is received. The latest development in this type of receiver will be demonstrated on the Marconi stand.

NOR-RUST LIQUID LEAD CO., LTD.

The iron, shipbuilding, engineering and allied trades spend many millions of pounds a year in making good damage caused by rust. Nust is liquified lead, which, when coated on iron and steel, will render them absolutely impervious to the action of rust. One single coat of Nust, applied with a brush, is sufficient to protect iron or steel. Nust is not affected by heat or

cold, and unlike paint, does not scale or crack, even when the metal surface is stretched 1 per cent. Nust is unaffected by sea-water, smoke gases and acids, and can only be removed by a definite metal separation process. Battleship grey in colour, it can be used as a primer for paint. It is claimed to have withstood all recognised tests carried out by independent authorities. The Swiss Locomotive and Machinery Factory of Winterthur report that sheet iron coated with Nust and exposed to smoke and fume-laden atmosphere, was found to be free from rust, and with the Nust coat perfect, at the end of three years. Rigorous and extensive tests have also been carried out by Messrs. Riley, Harbord and Law, Consulting Metallurgists, of London, the Swiss Federal Institute, the A.E.G. of Berlin, and the Berne Institute, amongst others, and in all cases Nust was found to have completely prevented and withstood rust and corrosion.

RUSTON AND HORNSBY, LTD.,

will exhibit a Ruston 200 k.w. Marine Auxiliary Generating Set, as supplied for vessels of several prominent shipowners. The engine is a 5-cylinder unit running on the well-known Ruston airless injection principle. The engine has shown itself to be a reliable power unit, capable of running continuously over long periods with heavy loads, when using low-grade fuel oils. Starting is effected instantly from cold by compressed air and the engine runs steadily at all loads. The engine is of the totally enclosed type giving clean appearance, and the doors are of generous dimensions providing easy accessibility to all working parts. Crankcase doors are sufficiently large to permit the withdrawal of the piston without removing the cylinder head. Adequate lubrication of all the working parts is secured by means of forced lubrication with an efficient lubricating oil filtering system. The filter is duplicated to permit inspection and cleaning while the engine is running. Great attention is paid to selection of high-grade materials and this, with care in manufacture and efficient lubrication, makes for a thoroughly reliable unit. An invitation is extended to engineers interested to make independent enquiries regarding the behaviour of similar units installed on many well-known vessels. Propulsion engines are represented by the Ruston High-speed Vertical engine, working on the same principle of airless injection, being totally enclosed and having forced lubrication throughout. Starting from cold and using a wide range of crude or residual fuel oils this engine will make a strong appeal to those who look for reliable running and extremely low running costs.

SIEBE, GORMAN AND CO., LTD.,

will be exhibiting diving apparatus of all patterns, also smoke helmets for steamships, oil tankers, docks, etc. They will also be showing gas masks, oxygen resuscitating apparatus, and submarine appliances.

SOUTHERN RAILWAY CO.

On this stand will be shown a model of the Southampton Docks Estate. Scale 50-ft. to 1-in. Size of model: Length, 10-ft. 1 $\frac{1}{2}$ -in.; width, 7-ft. 6 $\frac{1}{2}$ -in.; height (off ground), 4-ft. 1 $\frac{1}{2}$ -in.

STOTHERT AND PITT, LTD.,

are again exhibiting their Rotary Displacement Pumps, manufactured under British Patent No. 130839. The exhibit will include a range of designs as built for land and marine service, a number of the pumps being in operation for the purpose of demonstrating their characteristics under varying conditions of suction lift and discharge pressure. Visitors will be shown examples of complete pumping units similar to those built by the Company to be installed on the largest passenger liners constructed for the Cunard Steamship Co., the Canadian Pacific Steamships, Ltd., the Compagnie Generale Transatlantique and the Stoomvaart Maatschappij "Nederland." Examples will also be shown of the various designs supplied for the oil industry and for the handling of a very complete range of high and low viscosity fluids. The exhibit will also include models of electric dockside cranes, as supplied for Gladstone Dock, Liverpool, Southampton, Santos, Calcutta, Rio de Janeiro and many other ports throughout the world.

Shipping, Engineering and Machinery Exhibition—continued

JAMES WALKER AND CO., LTD.

The exhibit of "Lion" Packing and other Walker's reliable Packings, Jointings and Mechanical Rubber Goods will be an attractive unit of the Exhibition. It is claimed that "Lion" Packing was the first to possess a semi-metallic wearing surface, combined with woven fabric and designed on scientific principles whereby the action is entirely automatic. The packing expands to the varying pressures and inequalities of the rod or box, and thus ensures a fluid-tight joint in all circumstances with the minimum of friction. "Lion" Packing, whose slogan is "The King of Packings," is being successfully used on land, sea and air. Walker's "Golden Walkerite" Jointing

—the world's best compressed asbestos jointing—is also given due prominence. The jointing is supplied in enormous quantities to the leading steamship, railway and motor companies, etc. Messrs. Walker specialise in the design and manufacture of packings and jointings for all classes of power, and among the comprehensive specimens on exhibition will be seen some new manufactures. Special mention should be made of Messrs. Walker's Rubber Goods (Sheeting, Valves, Cone Rings and Moulded Rubber Goods). It is also interesting to note that special packings were designed by this company for the R100 Airship, the Schneider Trophy Supermarine S6, and Miss England II.

Bombay Port Trust

At a meeting of the Trustees of the Port of Bombay held on 30th June, 1931, the Chairman announced that, subject to final audit, the accounts for the financial year ended 31st March, 1931, had been closed and the result of the year's working was a deficit of Rs.12.71 lakhs on General Account as against the deficit of Rs.15.46 lakhs estimated in the revised budget prepared in December last. The Revenue Receipts, Rs.244.44 lakhs, had closely approximated the estimate, but a saving of Rs.2.75 lakhs had been effected in expenditure. The Pilotage Account showed a surplus of Rs.99,520.

At a meeting of the Trustees of the Port of Bombay, held on July 14th, 1931, the following were the main items of business disposed of:—

An order for 3,500 steel sleepers for replacements on the Port Trust Railway was placed with the Tata Iron and Steel Co., Ltd.

An estimate of Rs.6,000 for special repairs and renewals of decks and hulls of two salvage barges was sanctioned against the relative budget provision.

Subject to Government approval, the docks wharfage rate on artificial silk yarn was reduced to 6 annas per package up to 40 cubic feet (plus surtax) to correspond with the existing rate on artificial silk piece goods; the corresponding rates at the Bunders was similarly revised.

A post of deputy accountant in the Accounts Department was reduced, on retirement of the late incumbent, to the grade of a senior assistant accountant, thereby effecting a saving of Rs.6,300 per annum.

Two short-term leases of plots of land at Wadi Bunder (area about 2,928 sq. yds.) and at Wadala (area about 7,825 sq. yds.) were granted for liquid fuel and kerosene installations respectively.

At a meeting of the Trustees of the Port of Bombay held on 29th July, 1931, the following were the main items of business disposed of:—

The following expenditure estimates were approved:—

(1) Rs.41,880 for construction of a godown of approximately 7,000 sq. ft. at Mazagon Sewri Reclamation to be leased to the Haverro Trading Co., Ltd., for storage of heavy chemicals and hazardous goods, on a lease co-terminous with their existing lease of the adjoining premises and on similar conditions.

(2) Rs.8,100—the valuation fixed by the High Court—for acquiring 2,700 sq. yards of hill-side on the north-east side of the Port Trust property at Cumballa Hill for the purpose of carrying out protective works to prevent a further landslide on the property.

(3) Rs.28,000 against budgetted provision for special repairs to the hydraulic cranes in Prince's and Victoria Docks.

(4) Rs.7,230 for paving footpaths and constructing carriage entrances to serve certain plots recently leased for residential purposes at Apollo Reclamation.

A representation was considered from the Bombay Rice Merchants' Association asking for a reduction of ground rent on leaseholds held by their members in Manson and Gamadia Roads and for extension of the user clause. The Trustees decided that there were no grounds for any reduction of rent, but they agreed to cancel the stipulation restricting the user of the premises to storage of rice and to extend it to general storage of non-hazardous goods.

Two 10-year renewals of existing leases in Bhandup Street were granted on terms agreed to by the lessees.

At a meeting of the Trustees of the Port of Bombay held on 11th August, 1931, the following were the main items of business disposed of:—

Mr. W. H. Neilson, O.B.E., Chairman, was elected to represent the Bombay Port Trust on the Committee of Management of the Indian Sailors' Home, Bombay, when constituted on completion of the building.

The following expenditure estimates were sanctioned:—

(a) Rs. 16,100 for purchase of new 15 cwt. motor-driven pneumatic power hammer for the Port Trust Workshops.

(b) Rs. 6,300 for electric re-wiring of "K," "L" and "M" Sheds, Prince's Dock.

Draft rules were approved to provide for the inclusion of steam and motor launches in the Passenger Boat Rules and Table of Fares framed under the provisions of the Indian Ports Act for regulating passenger boats plying for hire in the Port of Bombay.

An amendment of the Docks and Bunders Scales of Rates was approved to provide for a reduced rate of wharfage, storing charges and warehouse rent on paper, straw boards, etc., imported in packages weighing up to 1 cwt.

Marconi Beacon Stations for Uruguay

Three new automatic wireless beacon stations are to be erected on the Uruguayan Coast by the Marconi Company on behalf of the Hydrographic Department of the Government of Uruguay. The stations, which are expected to be placed in commission in the summer of 1932, are to be of the fixed omni-directional type.

Two of the transmitters will be installed in lighthouses—at Lobos Island and Cape Polonio; and the third in the English Bank Light Vessel.

The transmitters are designed to operate on two definite wavelengths, one of 600 metres and one between 950 and 1,050 metres. Normal operation of the beacon signals will be on the higher wavelength in each case, but a telegraph keying circuit has been incorporated, so that in case of emergency or special need the beacons can be used as wireless telegraph stations, and in this case the 600 metre wavelength would be necessary to communicate with ships and coastal wireless stations. Three Marconi Type R.G. 27 receivers have also been supplied, so that if necessary complete transmission and reception services can be carried on, a feature which might prove of considerable value on lonely and isolated coast lines.

In addition, the Marconi beacon in the English Bank Light Vessel will operate in conjunction with a submarine sound signalling device so that navigators can estimate their distance as well as their direction from the light vessel. The submarine sounding device is to be fitted by the Marconi Company and arranged so that at stated periods the wireless beacon and the submarine sound oscillator will transmit simultaneously a series of dots at regular intervals. By counting the number of dots received by wireless before hearing the first dot transmitted through the water with the speed of sound (4,800 feet per second in water), the navigator can easily compute his distance from their source.

It is understood that the beacon station at Lobos Island will transmit on a wavelength of 1,000 metres, and the distinctive 60-second signal allotted to the station will be as follows: Three call letters L in Morse characters (10 seconds), series of dashes (30 seconds), three call letters L (10 seconds), 10 seconds' silence. Each transmission will consist of five repetitions of this distinctive signal.

The beacon station at Cape Polonio will transmit on the wavelength of 1,050 metres, the distinctive 60-second signal being as follows: Three call letters P in Morse characters (10 seconds), series of dashes (30 seconds), three call letters P (10 seconds), 10 seconds' silence. Each transmission will consist of five repetitions of this signal.

The allotment of a distinctive signal for the English Bank lightship has not yet been finally decided, in view of the special arrangements for the transmission of a series of dots in conjunction with the submarine signal device. It is understood, however, that the station will be allotted a distinctive wireless beacon signal, commencing with the letters "B I" in Morse characters.

Italian Harbour Affairs

ACCORDING to statistics which have just been published by the Ministry for Communications, shipping at Italian ports during the month of July included the arrival of 20,962 ships representing 6,986,830 net register tons, carrying 2,186,597 tons of goods and 497,484 passengers and the clearance of 20,745 ships representing 6,929,780 net register tons, carrying 724,874 tons of goods and 466,087 passengers. Total shipping at Italian ports during the month of July, 1931, thus included the arrival and clearance of 41,707 ships representing 13,916,610 net register tons, with 2,911,471 tons of goods and 963,571 passengers, against 40,871 ships, 13,726,886 net register tons, 3,150,799 tons of goods, and 917,763 passengers arrived and cleared during the month of July, 1930.

The number of ships arrived and cleared and the tonnage has shown an increase, but the volume of goods handled has shown a decrease, due chiefly to the depression in imports, since exports have shown an increase from 702,763 in July, 1930, to 724,874 tons in July, 1931.

It may be interesting to consider the following figures regarding trade at Venice during July, which have been published by the Provveditorato del Porto di Venezia:—

	Imports Tons	Exports Tons	Total Tons
July 1931	243,958	51,097	295,055
July 1930	270,331	27,973	298,304
	-26,373	+23,124	-3,249

The decrease in imports is due to the smaller imports of coal (—19,000 tons), chemical fertilizers (—6,000 tons) and to general cargo (—1,300 tons), while the increase in exports is due to the larger shipments of pyrite ashes and to general cargo. The total shipping at Venice during the first seven months of this year has shown a decrease of 82,000 tons, corresponding to 4.67 per cent., which is no higher than the percentage of decrease shown by shipping at Venice during the period from January to July, 1930.

In the course of its last meeting, the Italian Cabinet decided to allow a credit of 46,000,000 lire in order to carry out improvements on the River Po, from the mouth of the Adda to the mouth of the Mincio, thus enabling 600-ton lighters to be towed over this route, and realizing what is considered the inland route from Milan to Venice.

The organization of the "Congres International de Navigation," which is to be held at Venice in September, is being followed with interest. The Government is preparing a set of pamphlets on Italian ports, and on the efforts which are being made to improve navigation. The works of the meeting will be divided into two sections, "the inland navigation section" and "the maritime navigation section." Among the papers to be read in the second section there are some of considerable interest, one on the operation of ports and another on the construction of quays, etc.

The question of the development of shipping at Naples is being followed with the greatest interest, since the Italian Government has allowed about 400 million lire to carry out harbour improvements and enlargements at that port. In shipping quarters it is asked:—(a) that the existing Naples—Istanbul steamship service should be accelerated; (b) that an express service between Naples and Batum should be created; (c) that the regular service to Danube ports should be improved; and (d) that a new express service be created between Naples and Beyrouth. However, the harbour enlargements described in an article which appeared in *The Dock and Harbour Authority* for October, 1930, have made considerable progress. The superstructure of the Granili Breakwater, the construction of quays between the inclined pier and the Vittorio Emanuele II. Pier, and the construction of the new quays on these piers have been completed. Four electric cranes have been placed on the Primo Esagono Square and several warehouses have been constructed. The Prince Line Ltd. has decided to include the Port of Naples in the schedule of their regular service from Japanese, Chinese and Indian ports to New York and Boston via Suez and Gibraltar.

At the same time, however, efforts are also being made to increase trade with the Near and Far East from Adriatic ports, and particularly from Bari and Brindisi. Great interest is being shown in regard to the development of shipping at Bari. In this connection it should be noted that while about 60 years ago this port only had 50,000 inhabitants, there are now nearly 200,000, and that while the volume of goods unloaded and loaded at that port in 1895 reached 140,000 tons, it is now nearly 500,000 tons. The harbour enlargements which are being carried out at Bari are approaching completion. In the course of 1932 Bari will have about 6,000 metres of quayage

with a depth of 12 metres, so that the largest ships will be able to anchor at that port. The new dock will be fitted with electric cranes and elevators and three and four floor warehouses are to be constructed. New tariff reductions have been realised in connection with the cost of unloading and loading at Bari, and recently a new understanding between the Italian Government and the Società di Navigazione Puglia has increased the number of sailings from Bari to Egypt, from Bari to Albania and Dalmatia.

Considerable attention has been paid recently to the smaller Italian ports, such as Crotone, Pescara and Trapani, and harbour improvements have been carried on there to the value of 100 million lire. The result is that shipping has increased favourably in these ports. New works have been initiated at Termoli and a credit of 5 million lire has been allowed.

At the Cantiere Federale di Pietra Ligure there has been launched a new type of electric rock breaking pontoon, built to the order of the Ministry for Public Works. It is impossible to obtain any information at present on this new apparatus as trials are being made to ascertain its success.



Electric Elevators at Spezia.

According to estimates which are being made, it would appear that the present harbour enlargements at Massowah, involving an expenditure of about 14 million lire, will be completed during 1932. The construction of a quay at Gherar to facilitate the unloading of coal necessary for the railway from Massowah to Asmara, and to facilitate the export of salt has been postponed for the present. With the completion of the new port it will be possible for Massowah to handle the whole trade going through that port to and from Ethiopia.

The construction of the Port of Bengasi, which is entrusted to the Sindicato Italiano Costruzione Appalti Marittimi (S.I.C.A.M.), is proceeding satisfactorily. The construction consists of a breakwater in three sections, (1) 563 metres, (2) 210 metres and (3) 835 metres long respectively and involves an expenditure of 60,000,000 lire. The first two sections have already been completed, and it is expected that the third section will be completed in 1932. The construction of the breakwater is being made with blocks of 120 tons, and the use of such heavy blocks has been rendered necessary by the violence of the sea around the South African coasts.

Messrs. Vickers-Armstrongs, Limited.

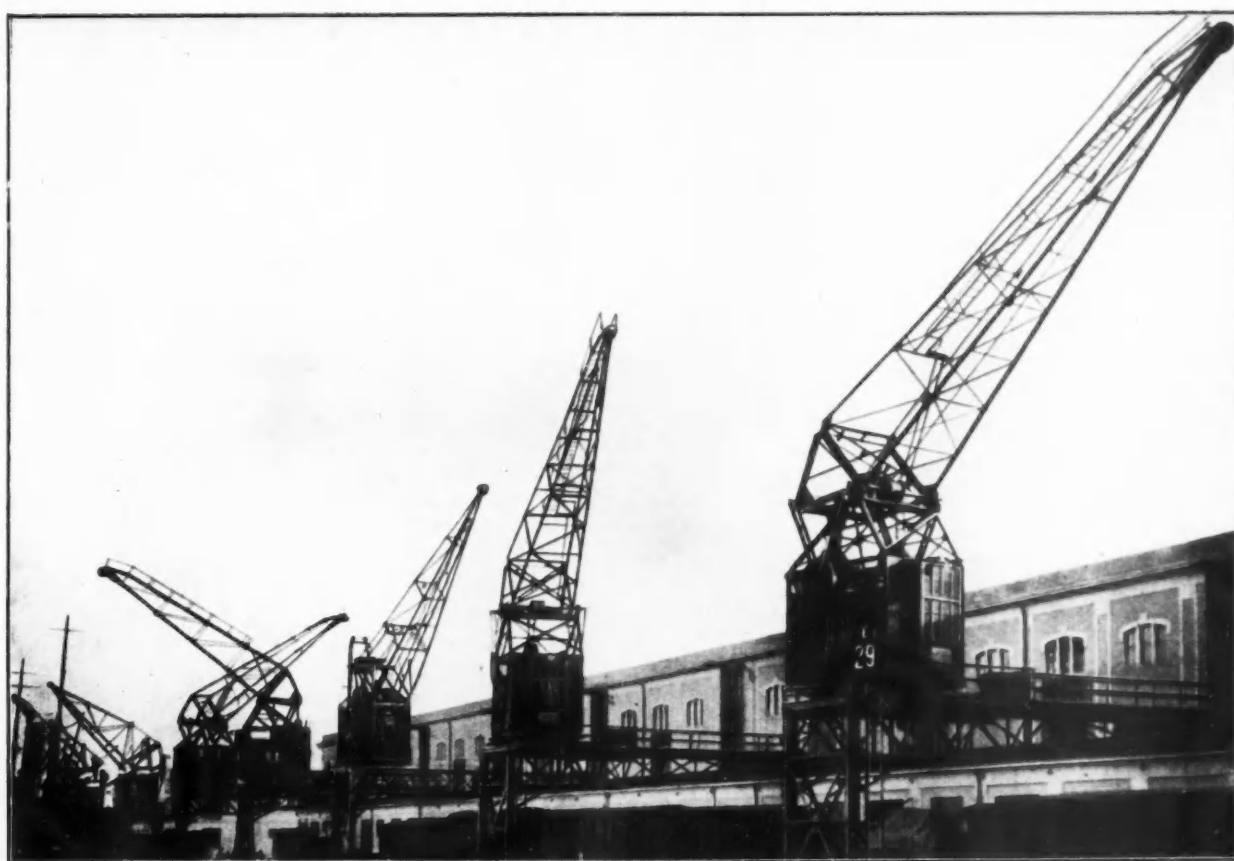
Mr. J. M. Ormston, M.B.E., has been appointed a special director of Messrs. Vickers-Armstrongs, Ltd., in charge of their naval yard at Walker-on-Tyne. He will be directly responsible to Commander Craven, the Managing Director of the Company's works. Mr. Ormston served his apprenticeship at Messrs. Sir W. G. Armstrong Whitworth and Co., at the Elswick shipyard. Latterly he has been with Vickers-Armstrongs following service with the Singapore Harbour Board.

It is notified that continuing their policy of concentration of production, the Board of Vickers-Armstrongs Limited have decided to transfer from their Erith Works the manufacture of products at present being carried on there. The manufacture of the heavier products of these Works has already been transferred to the Company's Northern Works at Newcastle and Barrow-in-Furness, and the Company now intend to concentrate the lighter products in their Crayford and Dartford Works. Owing to the proximity of the three Works, the Company do not consider that there will, in consequence of this re-arrangement, be any serious disturbance of employment in the district.

New Installations at Italian Harbours



Electric Elevators at Spezia.



New Cranes installed at Genoa.

Notes of the Month.

Book Reviews.

Owing to lack of space, we have unavoidably had to hold over reviews of the following two books :—
“ The Reclamation of Land from the Sea,” by F. M. Du Plat-Taylor; and “ Dredging of Harbours and Rivers,” by E. C. Shankland.

Thames Dock Development to Cope with Growing Trade.

To cope with the rapid growth of trade with the Continent, extensive improvements are being carried out at the Regent's Canal Dock at Limehouse.
Roland-Argo Wharves, Ltd., who already own three wharves in the dock, have acquired a fourth and are providing it with the most modern equipment. This includes powerful electric cranes which lift cargo straight from a steamer's hold over intervening buildings and on to motor lorries standing in the roadway or into barges ready to go along the Grand Union Canal.
This company deals with nearly 400 steamers a year and the total weight of cargo annually handled is about 300,000 tons. Expeditious handling enables steamers to run to a time schedule with the precision of express trains. This is of great advantage, not only to shipping companies but also to the factories which line the banks of the canal and to which regularity of supplies is a matter of importance.
The Regent's Canal Dock forms a terminus of the Grand Union Canal, which links the Thames with the Trent and the Midlands, and is the only privately-owned dock in the Port of London.

London's Shipping.

During the week ended July 31st, 1,004 vessels, representing 983,752 net register tons, used the Port of London. 579 vessels (827,495 net register tons) were to and from Colonial and Foreign ports, and 425 vessels (156,257 net register tons) were engaged in coastwise traffic.

During the week ended August 7th, 842 vessels, representing 834,737 net register tons, used the Port of London; 514 vessels (703,075 net register tons) were to and from Colonial and foreign ports, and 328 vessels (131,662 net register tons) were engaged in coastwise traffic.

During the week ended August 14th, 1,106 vessels, representing 995,138 net register tons, used the Port of London. 542 vessels (787,321 net register tons) were to and from Colonial and Foreign Ports and 564 vessels (207,817 net register tons) were engaged in coastwise traffic.

During the week ended August 21st, 1,132 vessels, representing 939,690 net register tons, used the Port of London. 557 vessels (752,104 net register tons) were to and from Colonial and Foreign ports, and 575 vessels (187,586 net register tons) were engaged in coastwise traffic.

Tilbury Tourist Traffic.

Shipowners are finding the passenger landing stage at Tilbury increasingly popular among tourists on holiday cruises, a large proportion of the 11,500 passengers who embarked or disembarked during July being in this category. In all 46 vessels, representing 357,125 gross register tons, used the stage, the average time taken for each vessel being 1 hour 20 minutes, including the landing of baggage and mails.

Attacking the Marine Engine Market.

An active bid to capture for Great Britain a bigger share of the marine engine business of the world is to be made by the two biggest British oil engine manufacturers, Messrs. Ruston and Hornsby, Ltd., of Lincoln, and Messrs. R. A. Lister and Co., Ltd., of Dursley. In order to attack a market in which, after an exhaustive survey, they both feel that Great Britain

is at present too little represented, they have established jointly a new company, the Ruston Lister Marine Company, Ltd.
Two directors from each of the parent companies will be on the Board of the new company. Its registered offices are to be at Imperial House, Kingsway, London. The combined assets of the two firms behind the company are, with their associated companies, over £6,000,000.

Over a year ago Messrs. Ruston and Hornsby and Messrs. R. A. Lister and Co., came to an agreement to develop together the overseas markets in which they had previously been competing. The arrangement, which left each firm independent but gave it, at the same time, a call on the marketing resources of the other, has been of great value to both firms. The new company is a direct outcome of it.

The Marine Company will have behind it the resources of both its parent companies, and will enter the market with marine engines for all purposes, including motor boats, yachts, fishing smacks, trawlers, lifeboats, pinnaces, pilot boats, and various types of mercantile vessels.

Samples from the new company's range of marine crude oil engines from 5 to 500 h.p., will be on view for the first time at the Shipping, Engineering and Machinery Exhibition at Olympia this month.

These engines are the result of long and arduous tests carried out under expert guidance, and it is expected that they will be of great interest to visitors to the Exhibition. Notification has already been received that several foreign naval commissions and buyers from overseas are coming to the Exhibition in order to inspect the new engines, and enquiries have already been received for them from big companies both in this country and abroad.

The Port of New Orleans.

The present low water in the Mississippi River and its tributaries has had little effect upon the operations of barge lines and other river craft entering the port of New Orleans. According to figures released by the Dock Board, during the month of July inland watercraft numbering 341 vessels with a total tonnage of 128,862 tons arrived in port. This was an increase of 104 vessels and 29,504 tons over July, 1930.

The Industrial Canal continues to show marked activity. During the month of July, 1931, the Canal was used by 1,222 vessels having a total tonnage of 410,194 tons, representing an increase of 459 vessels and 113,275 tons over the same month of the previous year.

Importations of bananas also showed a splendid increase. During the month of July, 1,590,000 bundles were unloaded by the Board's conveyors, being an increase of 84,011 bunches as compared with July, 1930. Several other commodities also showed increases over the same month of last year. Among the imports, non-metallic minerals increased 34,481 tons, vegetable food products increased 4,630 tons, animals and animal products increased 376 tons, machinery and vehicles increased 143 tons and miscellaneous imports showed a gain of 518 tons. Textiles exported also showed an increase of 695 tons.

Seagoing vessels arriving during July, 1931, numbered 213. There were 210 departures during the month.

The seagoing vessels which arrived in port during the month had a total tonnage of 882,648 tons. Vessels using the public wharves had a total tonnage of 714,387 tons. Cargo paying tollage amounted to 247,319 tons.

Of the seagoing vessels which arrived more than 56 per cent., representing approximately 59 per cent. of the total tonnage, were under American registry. Honduras was second in number of ships and in tonnage, while Norway was third in number of ships and Great Britain third in tonnage.

The following is a tabulation of seagoing vessels, showing gross tonnage and arranged by nationalities, which arrived during July, 1931 :—

Nationality.	No. of Vessels.	Gross Tonnage.
American	121	521,787
Brazilian	2	11,442
Belgian	1	5,086
British	11	85,043
Danish	3	7,669
Dutch	3	22,934
French	1	5,984
German	8	34,281
Honduran	34	92,349
Italian	3	18,409
Japanese	5	31,893
Norwegian	16	33,986
Panaman	4	6,738
Swedish	1	5,047
	213	882,645

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¶ "The Basra Port Trust, which some six years ago equipped five of its control and pilot vessels in the Persian Gulf with Marconi Type Y.B.1 equipment, has recently confirmed the utility of these installations by ordering two more similar sets to be supplied by the Marconi Company."—**FAIRPLAY.**

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Port of Southampton Topics

Further Reductions in Sailings to and from Southampton.

THE drastic reduction made in the sailings between Europe and New York by the trans-Atlantic steamship companies, and now in operation, are to be followed by still further cuts. It had not been expected that these further reductions would have to be made, but the severity of the slump in the shipping industry necessitates these additional prunings. Several of the big ships connected with Southampton are to be taken out of the trade for varying periods. The reductions also apply to other ports, and several ships will be laid up. In other cases the sailings are changed, so as to avoid too great a gap in the services.

So far as Southampton is concerned, the Cunard Line have cancelled the "Berengaria's" voyage arranged from Southampton on November 7th, and the "Mauretania's" departure on November 14th has also been cut out. The "Mauretania" will, however, go on a cruise from New York to the West Indies at that time.

The White Star Line have made changes which affect all their express ships. It was originally decided, when the first changes were made, that there should be five sailings from Southampton during October. The latest programme, however, shows that the number of departures has been reduced to three in that month. The ship affected is the "Homerick." She was to have made two departures from Southampton, but instead she will now undertake a series of cruises from New York.

Even greater alterations are made in the Company's arrangements from November, and instead of a weekly express service, there will be only one departure, that by the "Olympic" on November 18th. In December there will be only three White Star express sailings, in January two, and in February one.

A very significant move so far as the White Star and Cunard Companies are concerned is that the usual winter arrangements, whereby they maintain alternate sailings in mid-week from Southampton, is being brought into effect at the beginning of October, although normally both companies maintain their separate services up till the end of November.

Post-war Record Created in Timber Imports.

The importation of timber into Southampton Docks has reached unexpected proportions during the first six months of the year, and the total tonnage of the shipments received constitute a post-war record. It is, indeed, practically certain that the figures for this particular period eclipse all previous returns. It is no mean feat in these days of depression to attract cargoes which have not been arriving previously, yet in the timber statistics the names of four countries which did not send cargoes to the Docks last year may be found. These countries are Norway, Russia, Germany and Sweden. On the other hand no timber was received from Finland, although a large quantity arrived in the previous year.

The fact that the timber imported through the Docks has increased from 8,201 tons in the first six months of 1930 to 12,167 tons during the corresponding period this year, is entirely due to the facilities which have been afforded by the Southern Railway Company, and the very favourable rates which have been offered for such cargoes.

Of particular interest is the fact that the largest amount of timber received at Southampton from any particular country came from Russia, namely 3,277 tons. This is largely due to an agreement which has been concluded between the Soviet Government and the federated timber firms. No political significance underlies the development of this traffic, for apart from any other consideration, Russia is in a position to supply certain soft and hard woods the like of which cannot be bought in any other part of the world. In pre-war days Southampton enjoyed a very valuable timber traffic with Russia, and it is very gratifying to learn of its revival.

The second largest importation of timber through the Docks emanated from the North Pacific ports. Practically all this traffic was brought by the splendid cargo vessels of the Royal Mail Steam Packet Company and the Holland America Line, which operate a joint service. Manufactured doors and broom handles are a speciality from this source, and whilst speaking of the North Pacific, it is very gratifying to find that yet another company is now bringing cargo to Southampton from those ports. This organization is the East Asiatic Company, which maintains the largest fleet of motor-ships in the world.

Whilst on the subject of cargo it is interesting to mention the heavy shipments of South African fruit which have been received at the port. This and certain other cargoes have been largely responsible for bringing about an increase of 8,175 tons of freight imported through Southampton in the month of July, as compared with the corresponding month last year.

Statistics for July.

Although there are more decreases than increases in the Southampton Docks statistics for July, yet there are some gratifying features. Most satisfactory of all is an increase of 7,017 tons in the cargo handled at the port in comparison with the corresponding month of last year. That must be considered most gratifying at a time when the export and import trade of the country is so greatly depressed, and it proves that the enterprise of the Southern Railway Company, whose object has always been to build up a strong cargo connection, is being rewarded.

The increase in cargo is in imports, for exports fell away slightly. Inward cargo amounted to 64,681 tons, as against 56,506 tons, an increase of 8,175, whilst outward cargo dropped from 36,859 tons to 35,701 tons, a decrease of 1,158 tons.

Taking into account that fewer Americans have crossed to Europe this summer than in previous years—a fact which led the shipping companies to curtail their sailing schedules and deciding to reduce fares—it is very satisfactory to find a decrease of only 413 in the number of passengers passing through the port in July.

The number inward fell from 40,124 in July last year to 37,832, a decrease of 2,292, but outward there was an increase of 1,879, the figure being 48,602 as compared with 46,723 a year ago.

There was an increase in the number of vessels using Southampton during the month, for inward the total was 405 as against 404, and outward 411 as compared with 406. Notwithstanding this, the tonnage figures showed quite a considerable decrease. Inward gross tonnage amounted to 1,639,801 as against 1,864,567 tons, a decrease of 224,766 tons, whilst outward the figure slumped from 1,880,802 in July, 1930, to 1,673,634 tons, a falling off of 207,168 tons. The net tonnage returns also showed a decrease—inward 854,119 tons as against 979,736 tons, and outward 875,097 as compared with 978,529. The decrease was therefore 125,617 tons inward and 102,432 tons outward.

Development of North Pacific Trade.

Having had so much cargo that she was brought to the Docks instead of being dealt with by tender, the East Asiatic motor liner "Europa" concluded her first visit to Southampton Docks on August 5th.

She had a big consignment from the North Pacific, including 30,429 cases of fresh fruit, 350 cases of tinned fruit, and 400 cases of pilchards. Another big item was 1,500 tons of grain, 129 tons of doors, over 800 tons of timber, and about 10 tons of broom handles.

Later on in the month the "Amerika," a sister ship to the "Europa," called at Southampton, with 1,500 tons of cargo, including about 900 tons of lumber.

This is evidence of the development of the connection established between Southampton and the North Pacific by the East Asiatic Company. It is not long since the first vessel sailed on this service. It was something in the nature of an experiment, with the possibilities of the passenger trade more in view than cargo, but the excellent facilities the Company have been able to offer in their two recent ships, the "Amerika" and the "Europa," have not only attracted passengers, but have also "caught the eye" of the exporters.

The "Europa" made another visit to Southampton towards the end of the month to receive passengers for the outward trip.

On the same day the "Boringia" called. That vessel is engaged on the Bangkok service. It was in connection with that service that the East Asiatic Company first decided to take advantage of the facilities of this port. The frequency with which the vessels now call here is one of the interesting developments of the last year or two.

"Nust" for the Great Western Railway Company.

The Great Western Railway have contracted with the Nor-Rust Liquid Lead Co., Ltd., for the coating of approximately 200,000-ft. of steel with "Nust" at the docks at Fowey.

Trials of the Dredger "Pilcomayo."

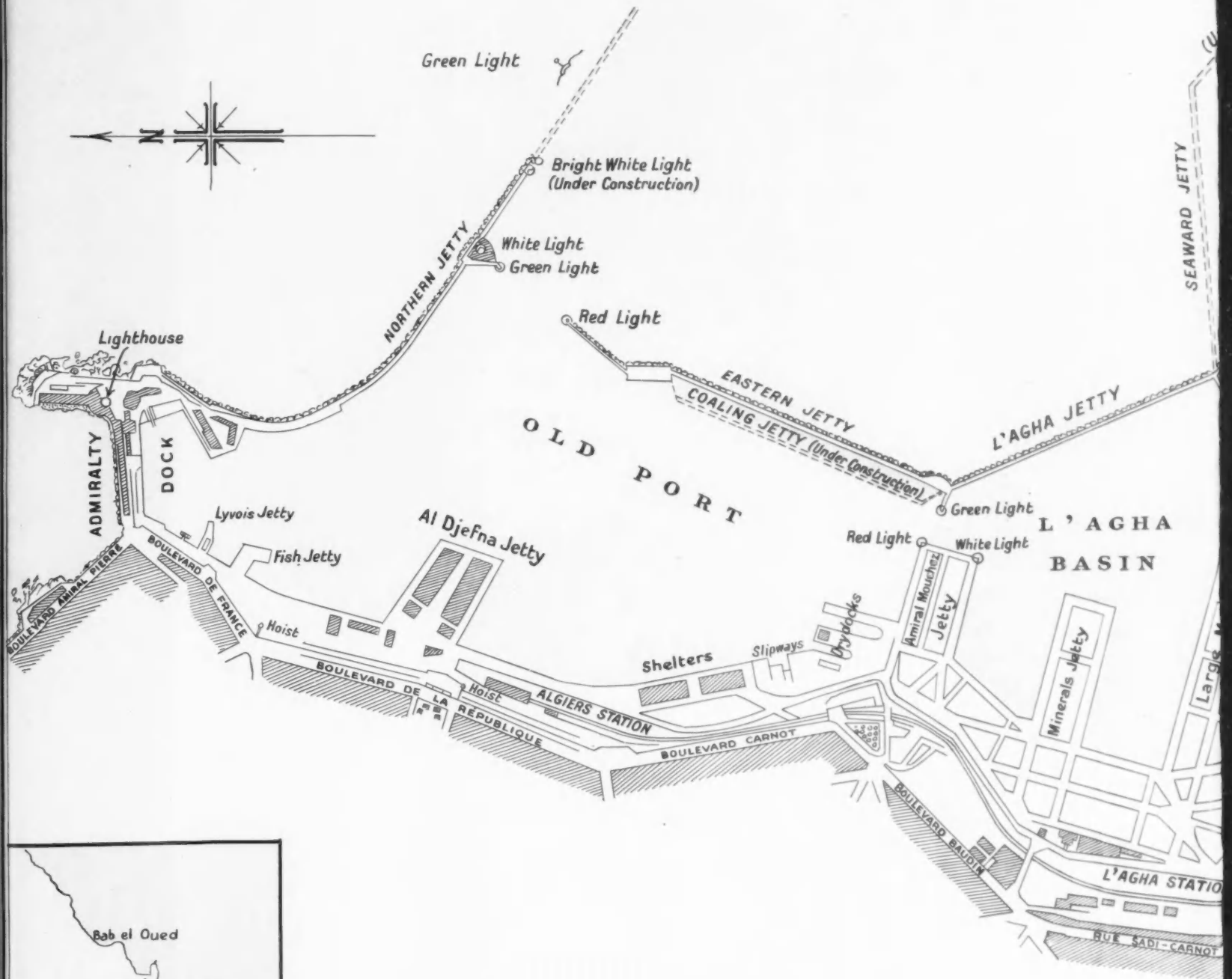
The powerful 2,000-ton Drag and Cutter Suction Dredger "Pilcomayo" has just completed satisfactory speed and dredging trials at the Port of Talcahuano, Chile. The "Pilcomayo" was built by Lobnitz and Co., Ltd., of Renfrew, Scotland, to the order of the Chilean Naval Commission, for the Chilean Government.

PORT OF ALGIERS.

UNDER THE JURISDICTION OF THE ALGIERS CHAMBER OF COMMERCE.

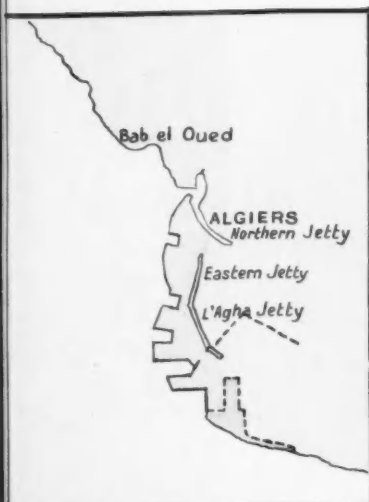
M E D I T E R R A N E A N

Green Light



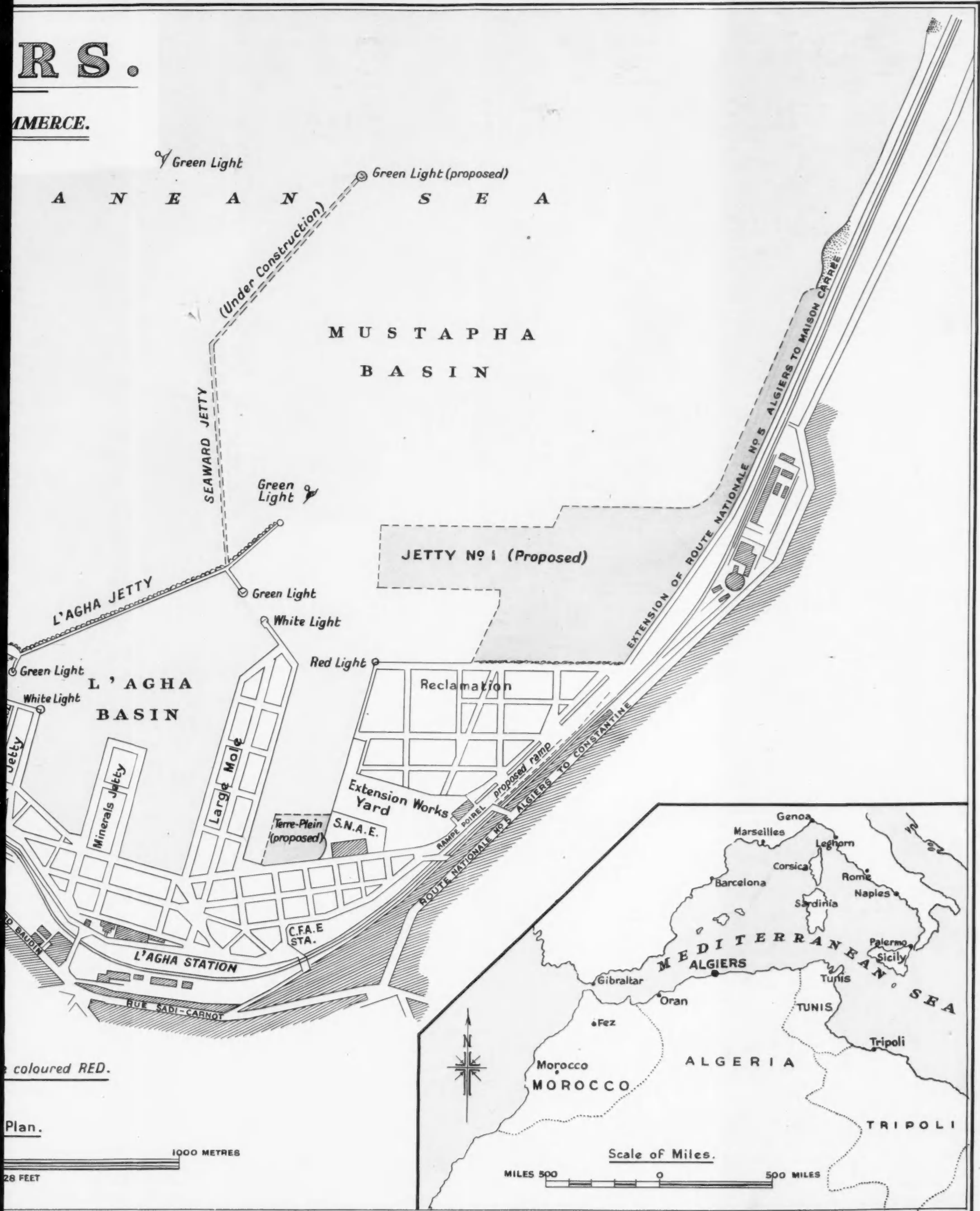
Note:- New Works are coloured RED.

Scale for Plan.



R S.

IMERCE.



coloured RED.

Plan.

26 FEET